DRAFT

COMPOSITE

ENVIRONMENTAL IMPACT STATEMENT

FOR

OPERATION AND MAINTENANCE OF

THREE PROJECTS IN THE

TECHE-VERMILION BASIN

BAYOU TECHE, BAYOU TECHE AND VERMILION RIVER AND FRESHWATER BAYOU, LOUISIANA

US ARMY ENGINEER DISTRICT, NEW ORLEANS

NEW ORLEANS, LOUISIANA

FEBRUARY, 1976

SUMMARY

BAYOU TECHE, BAYOU TECHE AND VERMILION RIVER, AND FRESHWATER BAYOU, LOUISIANA PROJECTS

(X) Draft Environmental Statement ( ) Final Environmental Statement

Responsible Office: Department of the Army
US Army Engineer District, New Orleans
Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160
(504-865-1121)

1. Name of action: (X) Administrative ( ) Legislative

2. Description of action: The planned actions would be to continue operation and maintenance dredging of the Bayou Teche, Vermilion River, and Freshwater Bayou, Louisiana projects. On Bayou Teche the following channel dimensions would be maintained: 8 X 80 feet from mouth (at lower Atchafalaya River) to New Iberia and 6 X 50 feet from the Keystone Lock and Dam to the vicinity of Arnaudville, La. On the Vermilion the following channel dimensions would be maintained: 8 X 80 feet from 8 foot contour in Vermilion Bay to the Gulf Intracoastal Water Way (GIWW) and 9 X 100 feet from GIWW to Lafayette, La. On Freshwater Bayou the following channel dimensions would be maintained: 12 X 125 feet from GIWW to the 12 foot contour of the Gulf of Mexico and 250 foot width in Gulf Approach.

3. a. Environmental impacts: Operation and maintenance dredging in the project would have the following beneficial impacts: additional acreage of upland habitats would be accrued along the river banks; species diversity of upland fauna and flora would be increased; navigation would be improved from Lafayette to the 8-foot contour of Vermilion Bay and the GIWW; flood control would be improved from Port Barre to the Vermilion Bay.

b. Adverse environmental impacts: Operation and maintenance dredging in the project area would have the following adverse impacts: increased river currents would accelerate erosion; permanent changes in the composition of floodplain forest might occur; deposition of dredged material in existing forested areas would destroy both the trees and dependent fauna; marshlands would be decreased by deposition of material; initial turbidity would decrease

the phytoplankton biomass; removal of brush from rivers would reduce the diversity of aquatic animals; maintenance of channels might encourage industrial growth which would degrade water quality; sediment disturbance would increase the potential for chemical and heavy element resuspension; disturbance of some archeological or historical sites by dredging or deposition would occur. The following acreages of habitats lost due to deposition of dredged material are: upland, 463.7 acres; bottomland, 625.5 acres; marsh, 294.6 acres; cleared land 1212.4; previously used land, 5229 acres; and shallow waters at river edge, 588 acres.

4. Alternatives: There are at most four alternative dredging procedures; they are to dredge hydraulically onto adjacent areas, dredge hydraulically into diked areas, bucket dredging and casting and stacking, or bucket dredging and barging of materials to nonadjacent sites. Of these the bucket dredging and casting and stacking method is favored in some reaches since it would require less acreage and therefore would damage less habitats than hydraulic dredging. Along the Bayou Teche and the Vermilion River (certain forested areas of Lafayette Parish along the Vermilion) are esthetically valuable and should not be disturbed. Dredged material from these areas could be transported to other disposal sites. The no action alternative would allow Freshwater Bayou to fill in and eventually to be useless for navigation; no action would probably not interfere with navigation in the Teche-Vermilion for many years, but would allow flood problems to continue.

5. Comments requested:

FEDERAL

J. Bennett Johnston, US Senator
Russell B. Long, US Senator
John B. Breaux, US Congressman
David C. Treen, US Congressman
US Department of Interior, Assistant Secretary for Program Development and Budget, Office of Environmental Project Review
US Fish and Wildlife Service, Field Supervisor, Vicksburg, Mississippi
US Fish and Wildlife Service, Field Supervisor, Lafayette, Louisiana
Environmental Protection Agency, Regional Administrator, Region VI
Environmental Protection Agency, Administrator, Washington, DC
US Department of Commerce, Deputy Assistant Secretary for Environmental Affairs
US Department of Commerce, Director, National Oceanic and Atmospheric Administration, National Ocean Survey
US department of Commerce, National Weather Service, National Oceanic and Atmospheric Administration
US Department of Commerce, Regional Director, National Marine Fisheries Service

US Department of Commerce, Area Supervisor, National Marine Fisheries Service

US Department of Agriculture, State Conservationist, Soil Conservation Service

US Department of Transportation, Division Engineer, Federal Highway Administration

US Department of Transportation - Eighth Coast Guard District

US Department of Health, Education, and Welfare, Regional Director

US Public Health Service, Vector-Borne Diseases Division

Federal Energy Administration, Director, Environmental Impact Division

US Department of Housing and Urban Development, Regional Administrator, Region VI

US Department of Housing and Urban Development Area Office, Director, New Orleans, Louisiana

Advisory Council on Historic Preservation

STATE

Governor's Council on Environmental Quality

Citizen's Advisory Board to the Governor's Council on Environmental Quality

The Bureau of Environmental Health

Louisiana Department of Public Works

Louisiana Department of Highways

Louisiana Department of Agriculture, Commissioner

Louisiana Wildlife and Fisheries Commission

Louisiana Wildlife and Fisheries Division, Oysters, Water Bottoms and Seafoods Division

Louisiana Wildlife and Fisheries Commission, Fish and Game Division

Louisiana Wildlife and Fisheries Commission, Fish Division

Louisiana Wildlife and Fisheries Commission, Coordinator, Environmental Section

Louisiana Wildlife and Fisheries Commission, Supervisor, District VI

Louisiana State Parks and Recreation Commission

Louisiana Archeological Survey and Antiquities Commission, State Archeologist

Louisiana Stream Control Commission

Louisiana Air Control Commission

Louisiana Coastal Commission

Louisiana Public Service Commission

Louisiana Forestry Commission

Office of Intergovernmental Relations, Office of the Governor

Louisiana Department of Conservation

Louisiana Department of Commerce and Industry

Louisiana State Department of Art, Historical and Cultural Preservation, Director

Louisiana Assistant Attorney General
Louisiana Department of Justice, Environmental Section
Louisiana Joint Legislative Committee on Environmental Quality
Louisiana State Land Office, Register
Louisiana State Planning Office
Louisiana State Soil and Water Conservation Committee
Louisiana State University, Associate Director, Louisiana Sea Grant Program Center for Wetland Resources
Louisiana State University, Coastal Studies Institute
Louisiana State University, Curator of Anthropology, Department of Geography and Anthropology
University of New Orleans, Coordinator, Environmental Impact Section, Department of Environmental Affairs
University of New Orleans, Department of Anthropology and Geography

ENVIRONMENTAL

Ecology Center of Louisiana, Inc.
Orleans Audubon Society
National Audubon Society, Library
National Audubon Society, Southwestern Regional Office
National Audubon Society, Field Research Director
National Audubon Society, Director of Audubon Sanctuaries
National Sierra Club, San Francisco
Lafayette Sierra Club
Thibodaux-Houma Sierra Club, Thibodaux
ARK-LA-TEX Group Sierra Club, Shreveport
National Sierra Club, New Orleans
Delta Chapter, Sierra Club, New Orleans
Delta Chapter (Louisiana and Mississippi) Sierra Club, Baton Rouge
Baton Rouge Sierra Club
Chappepeela Group Sierra Club (Florida Parishes) Hammond
National Wildlife Federation, Washington, DC
Louisiana Wildlife Federation, Baton Rouge
Louisiana Wildlife Federation, New Iberia
Louisiana Wildlife Federation, Alexandria
Louisiana Wildlife Federation, Shreveport
Wildlife Management Institute, Washington, DC
Wildlife Management Institute, South-Central Field Representative
The Conservation Foundation
Environmental Defense Fund
Natural Resources Defense Council
Environmental Information Center, Inc.
League of Women Voters of US
Bass Anglers Sportsman Society of America
Slidell Sportsmen's League
The Coalition of American Rivers

South Louisiana Environmental Council, Houma
The Fund for Animals, Inc.

OTHERS

Gulf States Marine Fisheries Commission
South Central Planning and Development Commission
Louisiana Shipbuilders and Repair Association
Louisiana Intracoastal Seaway Association

6. Draft Statement to CEQ MAY 6 1976 ____________________.

Final Statement to CEQ ____________________.

BAYOU TECHE, BAYOU TECHE AND VERMILION RIVER
AND FRESHWATER BAYOU

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ENVIRONMENTAL STATEMENT

SECTION 1--DESCRIPTION OF WORK

1.01 GENERAL

The planned actions for Bayou Teche call for maintaining a channel 8 by 80 feet from the lower Atchafalaya River to New Iberia (mile 0 to 54.5), a project which is 98% complete; maintaining a channel 6 by 50 feet from Keystone Lock and Dam to 2 miles below Arnaudville (mile 72 to 103.5); and maintaining a channel from 2 miles below Arnaudville to Port Barre, Louisiana. The purpose of the project is to maintain adequate channels for existing commerce and for flood control from Port Barre to Vermilion Bay via Bayou Teche, Bayou Fusilier, and the Vermilion River. Plans for dredging the Bayou Teche have not been made because local interests have not provided dredge material deposition sites. No dredging will take place until such sites are granted. The channel in the vicinity of the east and west Calumet floodgates is dredged annually and dredged material amounts to 15,000 cubic yards per year. Dredging is next scheduled for July, 1976. The projected work on the Vermilion River would require maintenance of the 8 X 80 foot channel from Vermilion Bay to the Gulf Intracoastal Water Way (GIWW) (mile 0 to 5); and the 9 X 100 foot channel from the GIWW to Lafayette, Louisiana (mile 5 to 50.5). However, from the GIWW to mile 17.5 the flood requirements (19 X 120 ft.) exceed the 9 X 100 foot channel. The next scheduled dredging on the Vermilion River is planned for 1978 for the segment from GIWW to mile 17.5 Canal. The estimated amount of dredge material to be removed is 3.6 million cubic yards. The segment between Woodlawn Bridge and Lafayette (mile 35.5 to 50.5), is estimated to require the removal of one million cubic yards. The next scheduled dredging for this segment has not been set. Dredging on the remainder of the Vermilion River has not been scheduled nor have estimates been made for the amount of dredged material to be removed. The Freshwater Bayou navigation canal from GIWW to the lock (mile 1.3 to 19.5) is scheduled to be maintenance dredged every six years with the removal of approximately two million cubic yards of dredged material. The next scheduled dredging for this segment is in the fall of 1976. The channel from the lock to the 12 foot contour of the Gulf of Mexico will be dredged every two years with the removal of approximately 700,000 cubic yards of dredged material and the next scheduled dredging is in 1976. That portion of the Teche-Vermilion project from Port Barre to Pinhook bridge in Lafayette, La., via Bayou Teche, Bayou Fusilier, and the Vermilion River are currently maintained by mechanical and chemical destruction of vegetation along the streambanks for flood control purposes. The projected work may eventually require this type of streambank work on all three projects.

1.02 LOCATION OF PROJECT AREA

The project area (figure 1) is in south central Louisiana and includes Bayou Teche from Port Barre south to the lower Atchafalaya River at Patterson, La., St. Mary Parish; it includes the Vermilion River from Bayou Carencro, 20 miles north of Lafayette, to the Vermilion Bay. It also includes the Schooner Bayou Cutoff (mile 19.5 to 14.5), Sixmile Canal (mile 14.5 to 10.25), Belle Isle Canal (mile 10.25 to 4.5), and Freshwater Bayou Canal (mile 4.5 to -3). For brevity in this report these canals will collectively be referred to as Freshwater Bayou. The project area is bounded on the east by the west Atchafalaya Basin Protection Levee, on the west partially by an escarpment carved into the prairie terrace by the Mississippi River when the latter occupied the Teche basin. South of the project area are Vermilion Bay, East and West Cote Blanche Bays, Atchafalaya Bay, and the Gulf of Mexico. The western side of the project area is not in the near vicinity of any major physiographic landmarks, though the Mermentau Basin lies approximately 30 miles west of the Vermilion River.

1.03 PLAN AND PURPOSE

a. Plan. The plan is to maintain the Bayou Teche, Vermilion River, and Freshwater Bayou to project dimensions as shown in Table 1.

b. Purpose. The purpose of maintenance dredging in Freshwater Bayou is for navigation and the purpose of maintenance dredging in Bayou Teche and the Vermilion River is for flood control and for navigation.

1.04 OPERATION AND MAINTENANCE

The operation and maintenance of the project area will be performed or administered by the U.S. Army Corps of Engineers.

1.05 AUTHORIZATION

The authorization for the Bayou Teche portion of the project was from the River and Harbor Act 26 June 1934 and prior River and Harbor Acts provided for dredging a channel 8 by 80 feet from the confluenced Bayou Teche and Lower Atchafalaya River to New Iberia (mile 0 to 54.5) thence 6 by 50 feet to Arnaudville (mile 106.5) and for constructing lock, dam, and regulating works (mile 72). Length of improvement was 106.5 miles. Under the Flood Control Mississippi River and Tributaries (FCMR&T) project, 45 foot wide flood gates (East and West Calmut Floodgates) have been provided in the Was Lake


ARKANSAS
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Shreveport
Monroe
Vicksburg
Natchez
Alexandria
Baton Rouge
Lafayette
Lake Charles
New Iberia
Morgan City
NEW ORLEANS
QUACHITA RIVER
BLACK R.
RED RIVER
MISSISSIPPI RIVER
PEARL RIVER
SABINE RIVER
ATCHAFALAYA RIVER
INTRACOASTAL WATERWAY
LAKE PONTCHARTRAIN
LAKE BORGNE
GULF OF MEXICO
PROJECT AREA
SCALE OF MILES
20 0 20 40 60
ENVIRONMENTAL STATEMENT
BAYOU TECHE, BAYOU TECHE AND VERMILION RIVER, AND FRESHWATER BAYOU, LOUISIANA
VICINITY MAP
JANUARY 1976
H-2-27095

FIGURE 1

TABLE 1

OPERATION AND MAINTENANCE PLANS FOR BAYOU TECHE, VERMILION RIVER AND FWB

NAME	MILES	LOCATION	PROJECT DIMENSIONS	METHOD OF DREDGING	* ACRES OF DISPOSAL SITES
Vermilion	0-5	Vermilion Bay to GIWW	8x80 feet	Bucket and/or hydraulic cutterhead	334.1
"	5-35.5	GIWW to Woodlawn Bridge	9x100 feet	Bucket and/or hydraulic cutterhead	1936.1
"	35.5-51	Woodlawn Bridge to E. of Pinhook Bridge	9x100 feet	Bucket and/or hydraulic cutterhead	326
Teche	0-54.5	Lower Atchafalaya to New Iberia	8x80 feet	Bucket and/or hydraulic dredge (from 0 to E.Calumet Floodgate); None (from W.Calumet Floodgate to 54.5)	621.6 (from mile 0 to E.Calumet Floodgate). None (from W.Calumet Floodgate to 54.5)
"	72-103.5	Keystone Lock and Dam to 2 miles below Arnaudville	6x50 feet	None	None available
"	103.5-124.8	2 miles below Arnaudville to Port Barre	Enlargement	None	None available

* Acreages listed are generally appropriate however they can be expected to vary to meet actual needs for disposal and actual areas available under easements in effect at the time maintenance is performed.

TABLE 1 (cont'd)

OPERATION AND MAINTENANCE PLANS FOR BAYOU TECHE, VERMILION RIVER AND FWB

NAME	MILES	LOCATION	PROJECT DIMENSIONS	METHOD OF DREDGING	* ACRES OF DISPOSAL SITES
FWB	-3.2-0	12 foot contour in Gulf of Mexico	12X250 feet	Hydraulic cutterhead	Open water
"	0-19.8	Lock to GIWW	12X125 feet	Bucket and/or hydraulic cutterhead	5195

outlet levees where they cross Bayou Teche. The Flood Control Act of 18 August 1941 provided for an 8 by 80 foot channel from the 8 foot contour in Vermilion Bay to the GIWW and a navigable channel 9 by 100 feet from the GIWW to Lafayette, La. (mile 52) in the Vermilion River. This same authorization provided for channel enlargement in Bayou Teche from 2 miles below Arnaudville to Port Barre, La. (mile 106.5 to 124.8). The project was reclassified as an "Operation and Maintenance General" project under the category "Navigation (locks, dams, reservoirs, and canals)" by authority of the office, Chief of Engineers, in 1st Indorsement, 23 April 1956, on letter of the Division Engineer, U.S. Army Engineer Division, Lower Mississippi Valley, 6 March 1956, subject, "Classification of the Mermentau River and Bayou Teche and Vermilion River, Operation and Maintenance, General Projects." The River and Harbor Act of 14 July 1960, House Document 435, 86th Congress, 2nd Session, authorized a navigation channel 12 feet deep and 125 feet wide from the GIWW (at mile 161.2 west of Harvey Lock) to the 12 foot depth contour in the Gulf of Mexico near Freshwater Bayou (mile -3.66), with increased width to 250 feet in the Gulf approach; jetties from the shoreline to the 6-foot depth contour in the Gulf of Mexico, and a lock near the Gulf of Mexico, 84 feet wide, 600 feet long, and 16 feet deep.

1.06 INTER-RELATIONSHIP AND COMPATABILITY OF PROJECT WITH EXISTING OR PROPOSED CORPS OR OTHER AGENCY PROJECTS

a. Existing projects. The major projects in the area of Bayou Teche, Vermilion River, and Freshwater Bayou, La. projects are listed below. Descriptions of the projects are taken from "Water Resources Development in Louisiana 1973" published by the US Army Corps of Engineers, Soil Conservation Service, and the police juries of the parishes in the project area.

(1) Atchafalaya Basin, Louisiana. This project is an integral part of the flood control plan for the Lower Mississippi River. The upper basin is divided into 2 parts, the Morganza Floodway and the West Atchafalaya Floodway. The features of the Atchafalaya project that are influenced by or would have influence on these maintenance projects are discussed below.

(a) West Atchafalaya Floodway. It is estimated that this floodway, will be used on an average of less than once in 100 years for carrying floodwaters. The floodwaters will enter the floodway by overtopping the levee at the head of the floodway and along the south bank of Bayou des Glaises and also some reaches of levee along the northwest bank of the Atchafalaya. The floodway has not been operated to date. The floodway, about 7 miles in width is located between the West Atchafalaya River levee and the west Atchafalaya Basin protection levee, and extends from

Bayou des Glaises to the latitude of Krotz Springs, a distance of about 32 miles. Below this point, it joins the floodwaters from the Atchafalaya River and the Morganza Floodway in the Atchafalaya Basin Floodway. Perpetual flowage easements were acquired by the Government over all lands and improvements in the floodway down to the latitude of Krotz Springs. These easements provide for full use of the lands for flood control purposes. Owners retain the rights to farm, improve, and inhabit the lands, and to harvest timber and minerals.

(b) Atchafalaya Basin Floodway. The floodway is located between protection levees approximately 15 miles apart extending from the lower limits of the Morganza and West Atchafalaya Floodways at the latitude of Krotz Springs to Morgan City and through the Lower Atchafalaya River and Wax Lake Outlet to the Gulf of Mexico.

(c) Atchafalaya Basin Levees. All levees in the Atchafalaya Basin except the guide levees for the Morganza Floodway are included under this heading. The levee system is designed to protect agricultural areas and towns from the normal high waters of the Mississippi-Red River backwater area, floods on the Atchafalaya River, and when necessary to divert excess floodwaters of the Mississippi and Red Rivers at the latitude of Old River through the Atchafalaya River, the Morganza, West Atchafalaya, and Atchafalaya Basin Floodways to the Gulf of Mexico, via Wax Lake Outlet and the Lower Atchafalaya River. The levees also protect valuable agricultural lands below Morgan City and west of Berwick from backwaters created by the diverted floodwater. The system includes about 423 miles of levees and currently will contain a flood of about 1,000,000 cubic feet per second. Work is under way to raise the floodway levees to an elevation to confine a design flow of 1,500,000 cubic feet per second. Individual levee features within the Atchafalaya system include the following:

1. The West Atchafalaya Basin Protection Levee. This levee begins near the town of Hamburg where it joins the Bayou des Glaises fuseplug levee. The levee extends in a south and southeasterly direction to the Wax Lake Outlet at the latitude of the East and West Calumet Floodgates and thence eastward to and through Berwick to the Gulf Intracoastal Waterway below. It covers 126.5 miles and connects with 1 mile of floodwall along the front of the town of Berwick. About 75 miles of the levee have been completed to revised standards and construction is well under way on the remainder.

2. The West Atchafalaya River Levee. This levee extends southward from Bayou des Glaises levee at Simmesport along the west bank of the Atchafalaya River and Butte La Rose to Bayou Carofier, a distance of about 61 miles, and includes several ring

levees and drainage structures. The total length of levee in this system is about 70 miles. It is essentially complete with only about 2 miles of levee that remain to be brought to grade and section.

(d) West Atchafalaya Basin Protection Levee, landside drainage improvements. Drainage intercepted by the West Atchafalaya Basin protection levee (WABL) is provided for under this project by enlargement of the landside borrow pit and natural streams in the area. Features of these improvements are as follows:

1. The West Bayou Darbonne Drainage Structure. This structure, located in the west Atchafalaya Basin protection levee at the Bayou Darbonne crossing, is a reinforced-concrete box culvert 10 by 10 by 265 feet long, with a manually controlled gate. The structure is used during low stages on the landside to permit flow, when possible, from the West Atchafalaya Floodway to Bayou Teche through Bayou Courtableau and thereby provides water frequently needed for irrigation purposes. During landside flood stages floodwaters in the borrow pit passes through the structure to the floodway. It will be closed during operation of the West Atchafalaya Basin floodway. The structure was completed in 1941 at a cost of $60,000 and is operated by the US Army Corps of Engineers.

2. Bayou Courtableau Diversion Channels and Control Structure. The original channel of Bayou Courtableau was blocked by construction of the West Atchafalaya Basin protection levee extending to the levee borrow pit. To retain and divert low-water flow into Bayou Teche at Port Barre for use in rice irrigation in the Teche and Vermilion River Basins where it is frequently needed, wide shallow, reinforced-concrete weirs with crests of 18.0 feet above mean sea level were constructed on the south bank of Bayou Courtableau just west of the levee. The width of the east weir is 482 feet and of the west weir, 517 feet. Floodflows pass over the weirs into the borrow pit below through outlet channels excavated below the weirs. The diversion channels were completed in 1939 at a cost of $36,700, and the structures were completed in 1942 at a cost of $14,500.

3. The Courtableau Drainage Structure and Channels. The feature is located approximately 2 miles southeast of the village of Courtableau. The feature consists of a five barrel reinforced concrete culvert 220 feet long with five mechanically operated vertical lift gates at the outlet end; an inlet channel 1800 feet long with a bottom width of 100 feet; an outlet channel 23,500 feet long with a bottom width of 120 feet; a 1300-foot levee along the south bank of the inlet channel; and guide levees on both banks of the outlet channel. This feature allows passage of floodwaters into West Atchafalaya Floodway or retains low and moderate flows (below 18 feet) on the landside for water supply in the Teche-Vermilion Basins. This feature was completed in 1956 at a cost

of $1,400,000.

4. The Charenton Drainage Canal. This canal is a drainage connection extending from the Charenton Floodgate to Bayou Teche and thence along Bayou Teche and a new land cut to West Cote Blanche Bay, an arm of the Gulf of Mexico. It provides an outlet for the intercepted drainage carried by the west Atchafalaya Basin protection levee borrow pit. The canal has a bottom width of 75 feet 30 feet below mean sea level and a design discharge capacity of approximately 22,000 cubic feet per second. This improvement required the construction of one railroad bridge and three highway bridges. It was completed in 1948 at a cost of $2,955,000.

(e) Atchafalaya River Improvement Dredging. Improvement dredging of the leveed channel of the Atchafalaya River and of its outlets is provided under this feature. Work includes the enlargement of the openings of existing railroad and highway bridges across the Atchafalaya River, and such alterations of existing crossings of this river as are deemed necessary to the execution of the plan. Other restricted sections of the channel are to be enlarged to increase the floodflow capacity of the Atchafalaya River. The improvement extends from the confluence of the Red, Old, and Atchafalaya Rivers to Alabama Bayou, Mile 57. All work has been completed, unless at a later date it is found that additional improvements are required.

(f) Atchafalaya Basin Main Channel Improvement Dredging. The flood-carrying capacity of the Atchafalaya is being increased by dredging a continuous main channel through the swamps of the central portion of the basin. The dredging extends from the Atchafalaya River at Alabama Bayou to the main body of Grand Lake near Morgan City. Dredging has been halted until completion of an EIS on this project. Completion of this feature is scheduled for 1985.

(g) Wax Lake Outlet. This outlet, with a capacity of 300,000 cubic feet per second, was constructed to divert floodwaters out of the Atchafalaya Basin to reduce flood heights and to protect, during extreme floods, the cultivable lands along the Teche and Boeuf Ridges and vital transcontinental routes of communication at the latitude of Morgan City. This dredged channel, located about 10 miles west of Berwick, extends from Sixmile Lake through the Teche Ridge and Wax Lake into Atchafalaya Bay, a distance of about 15.7 miles. When constructed in 1942 the channel was planned to carry 20% of the flood flows. It had a bottom width of 300 feet from Sixmile Lake to a point one-half mile below Bayou Teche and of 400 feet below that point, and a uniform depth of 45 feet below mean sea level. Since that time the channel has widened and deepened naturally and now carries approximately 30% of the floodflow.

(h) East and West Calumet Floodgates. These floodgates are located in the East and West Lake Outlet guide levees where the levees cross Bayou Teche. Each floodgate is a reinforced-concrete structure 161 feet long with a 45-foot clear width, a sill 9.8 feet below mean sea level, and steel sector gates. The floodgates will allow navigation in Bayou Teche, and will to some extent regulate floodflows. They were completed in 1950 at a cost of $1,320,000. Operation and maintenance are the responsibility of the US Army Corps of Engineers.

(i) Charenton Floodgate. This floodgate is located in the west Atchafalaya Basin protection levee, about 1 mile north of Charenton. It is a reinforced-concrete structure 175 feet long with a clear width of 45 feet, a bottom 10.8 feet below mean sea level, and steel sector gates. The floodgate regulates flows between Bayou Teche and the Atchafalaya Basin Floodway and affords a navigation connection between Grand Lake and the west Atchafalaya Basin protection levee borrow pit and Charenton Drainage Canal. In 1951 a removable bridge with a low steel elevation of 20.7 feet, mean sea level, was constructed across the structure. The floodgate was completed in 1949 at a cost of $298,000. Modification of the floodgate is planned to accomodate the 1963 stabilized flowline. Cost of this modification is estimated at $11,000. Charenton Floodgate is operated by the US Army Corps of Engineers.

(2) Loreauville Canal. Loreauville (or Teche Lake) Canal was excavated by local interests prior to construction of the WABPL to bring fresh water into Bayou Teche from Lake Fausse Pointe and to provide a navigation connection between the bayou and the lake. Since completion of the WABPL, flows have generally been eastward and have consequently reduced discharges in the reach of Bayou Teche between the Loreauville Canal and Charenton, Louisiana.

(3) Ruth Canal. This channel was constructed by and is operated under US permit by private interests to divert flows from Bayou Teche to supply irrigation needs along the Vermilion River. Flows from Bayou Teche are regulated by a concrete control structure near the the eastern end of the canal. The structure contains three gates, each 3 feet wide, with inverts at zero feet. Flows may be diverted only when the flow over Keystone Dam exceeds 100 c.f.s. The Ruth Canal is also known locally as Evangeline Canal.

(4) The Gulf Intracoastal Waterway Between Apalachee Bay, Florida and the Mexican Border. This project affords a practical inland route along the Gulf Coast. The waterway interconnects with the Mississippi River, Bayou Teche, the Vermilion River and other inland waterways. The present channel dimensions are 12 x 125 feet from the Mississippi River to the Sabine River. Enlargement

of this segment to 16 x 200 feet was authorized by the River and Harbor's Act of 1962. No funds have been allocated for planning or construction of this modification.

(5) Removing the water hyacinth and aquatic plant control. These are ongoing Corps projects to rid navigable waterways in the state of problem aquatic growth. Control of these plants is effected by prevention of spread by mechanical and chemical destruction. Research for development of the most effective and economic control measures is an integral part of these projects.

(6) Bayou Cocodrie and Tributaries. Authorized under the Flood Control Act of August 1941, this project provides for construction of a 59.8 mile channel improvement from Bayou Rapides west of Alexandria to Bayou Courtableau above Washington; clearing and snagging of 2.2 miles of Bayou Boeuf; enlargement of 14.9 miles of Bayou Boeuf; enlargement of 15.3 miles of Bayou Cocodrie, and clearing and snagging of 10.0 miles of Bayou Cocodrie. Gated control structures are located at the head of the diversion channel and in Bayou Lamourie. A fixed-crest weir near Lecompte ensures equitable low-water flow in Bayou Boeuf. This project has been modified to provide for the construction of a diversion channel from the lower end of the existing diversion channel near Washington to the Bayou Courtableau Control Structure to augment the flood carrying capacity of Bayou Courtableau; and for the construction of a three-barrel drainage structure adjacent to the Bayou Courtableau Control Structure to provide for diversion of the increased flows generated by the new channel into the floodway. Authorized in 1941, the project is complete except for the enlargement of 13.5 miles of upper Bayou Boeuf and the channel improvement of 25.3 miles of Bayou Cocodrie. This work is being delayed pending solution of a flood problem at and below the lower end of the diversion channel which could be aggravated by the improvements of Bayous Boeuf and Cocodrie. Planning work initiated on the Washington-Courtableau Control Structure has been discontinued until local interests agree to the alinement and to provide the local cooperation and rights-of-way for construction. Section 87 of the Water Resources Development Act of 1974, authorized the enlargement of Bayou Courtableau from Washington to the west Atchafalaya Basin protection levee in lieu of construction of the previously authorized diversion channel; that the rights-of-way and disposal areas therefore be provided at Federal expense, and that additional culverts through the west Atchafalaya Basin protection levee be provided as necessary for the increased flow.

(7) Avoyelles-St. Landry Project. Plans have been approved and work is to be done by the Soil Conservation Service. The project is designed for drainage of a watershed of approximately 247,000 acres into the Teche-Vermilion.

(8) Upper Bayou Teche. The Soil Conservation Service has made plans which have been approved to improve drainage of a 210,000 acre watershed into Bayou Teche.

(9) Lower Bayou Teche. Plans for this project were made by the Soil Conservation Service to improve drainage of a watershed of 188,700 acres. The work has not begun.

(10) Seventh Ward Canal (in Vermilion and Lafayette Parishes). This project has been completed by the Soil Conservation Service to improve drainage of a watershed of 32,000 acres.

(11) Lafayette Parish. The police jury has four projects in progress which will cause additional flow from watersheds into the Vermilion River. These four projects are: Isaac Verot Coulee, Coulee Mine into Carencro, Indian Bayou (s.w. border of Lafayette Parish), and Dan De Baillion Coulee (crosses into Ward 2). A fifth project, Bayou Carencro, is awaiting bids.

(12) Vermilion Parish. The police jury with parish draglines is improving local drainage in coulees and ditches. Specific areas of operation are considered below.

(a) Gravity Drainage District # 2. This project is for general drainage east of the Vermilion River near Abbeville.

(b) Coulee Kenney. This project drains watersheds west of the Vermilion River near Abbeville.

(c) Seventh Ward Canal. This project is in the central part of the parish, southwest of Abbeville and is responsible for draining the watershed in that area.

(13) Louisiana Department of Public Works. This agency has four projects which affect the Teche-Vermilion project and these are listed below.

(a) Joe Daigre Canal (W-14 Main). This canal outlets south of the Keystone Locks into Bayou Teche and has been completed.

(b) Bayou St. Clair in Lafayette Parish. This project has been completed and the watershed drains into the

Vermilion River.

(c) Magenta Canal in St. Martin Parish. This project has been completed and drains into the Vermilion watershed.

(d) Bayou Pont Brule in St. Martin and Lafayette Parishes. Bids have recently been let on this project which will cause improved drainage into the Vermilion watershed.

(14) Teche-Vermilion Basins Water Supply. The recommended plan of improvement is designed to restore flows diverted from the Teche-Vermilion basins by flood control projects as well as to provide additional water to these basins. A 1,300 cubic feet per second (c.f.s.) capacity pumping station will draw water from the Atchafalaya River 2 miles north of Krotz Springs, Louisiana. This water will be conveyed by a channel across the West Atchafalaya Floodway and into the west Atchafalaya Basin protection levee borrow pit from whence it will flow southward and be distributed between the west Atchafalaya Basin protection levee borrow pit, the Vermilion River, and Bayou Teche by the following proposed features: a culvert at Bayou Courtableau, a weir at Bayou Fusilier, and a gated control structure in the Loreauville Canal.

b. Inter-relationship of the Teche-Vermilion Basins and Freshwater Bayou Navigational Canal with the Above Projects.

(1) Inter-relationship of Atchafalaya Basin with the Proposed Project. The proposed project would be interrelated with the Atchafalaya Basin project only in an indirect way. Operation and maintenance work on the Teche-Vermilion and Freshwater Bayou would allow more water to be carried by these streams and therefore allow more water to be diverted from the Atchafalaya. In the northern segment of the project area the Bayou Courtableau Drainage Structure and Channels divert water to the Bayou Teche and Vermilion River through the WABPL from the protection levee borrow pit during low water periods. In the southern portion of the project area the Charenton Drainage Canal flows through Bayou Teche then across a land cut to West Cote Blanche Bay. The Loreauville Canal provides navigational access from Lake Fausse Point to Bayou Teche and also brings water from the lake to the Bayou. The Wax Lake Outlet diverts floodwaters from Sixmile Lake through the Teche Ridge and Bayou Teche into Atchafalaya Bay. The East and West Calumet Floodgates allow navigation on Bayou Teche, and regulate floodflows to some extent. The Teche-Vermilion Basin water supply project will cause more water to flow into the Vermilion River and Bayou Teche.

(2) Inter-relationships with GIWW. Through the GIWW the Vermilion River connects to Freshwater Bayou allowing navigation from Lafayette to the Gulf of Mexico. Also through the GIWW navigation can occur from Lafayette to any point on the GIWW.

(3) Inter-relationships with Ruth Canal. The Ruth Canal allows flow from the Teche to the Vermilion River when necessary for irrigation.

(4) Inter-relationships with SCS and Parish Projects. The many parish projects either planned or completed are designed to drain watersheds into the Vermilion River or Bayou Teche. The net result is to increase the water flow into these systems during high water periods.

SECTION 2--ENVIRONMENTAL SETTING WITHOUT THE PROJECT

2.01 GENERAL

The area to be affected by the planned actions are the Bayou Teche, Vermilion River, and Freshwater Bayou. All three waterways are located in South-Central Louisiana and their entire drainage systems are contained within the following parishes: Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion with a watershed of approximately 2,500 square miles. Topographically the project area runs from the higher elevations along the Bayou Teche in St. Landry Parish to the lower areas of the coastal marsh on the Vermilion Bay and the Gulf of Mexico.

2.02 GEOLOGICAL ELEMENTS

a. Introduction. Bayou Teche and Vermilion River belong to the Coastal Plain (Central Gulf) physiographic province. The Teche-Vermilion Basin sits astride the Teche Ridge and is part within the western portion of the Atchafalaya Basin and partially within the Vermilion River Basin. Freshwater Bayou navigational canal is a landcut beginning at the GIWW and emptying west of Cheniere au Tigre in the Gulf of Mexico.

b. Physiography and Geomorphology.

(1) General description. The major physical features in the study area include natural levees and large meander scars, which date back to the time the ancient Mississippi River flowed through the Bayou Teche and the tributary streams. Back swamp areas with standing water and lakes due to poor drainage, prairie terraces of Pleistocene age, coastal marshes of fresh, brackish, and saline waters, and coastal cheniers are other physical features within the area. Some of the smaller streams and bayous presently flow through the relict channels and meander scars associated with the ancient Mississippi River. The general elevation of the land within the study area ranges from above 60 feet mean sea level (m.s.l.) decreasing to less than 5 feet m.s.l. in the coastal marshes near Freshwater Bayou.

(2) Elevations and relief. Throughout the study area the general elevations and relief are low to moderate due to the nature of the topographic features. The lowest elevations are from sea level along the coastal marshes (2-5 feet m.s.l.) to a maximum of 152 feet for Avery Island one of five salt domes which interrupt the low lying marsh; the other islands include: Weeks, Jefferson, Belle Isle, and Cote Blanche.

(3) Geomorphology. The field research for the surface morphology of the study area only included the geomorphology of the rivers up to the river bank, but for a general geomorphic view of the six-parish area various geomorphic features will be briefly described with some explanation as to their origin(s) and/or causes.

(a) Natural levees. Natural levees are linear ridges of higher elevation which parallel the rivers and are formed by the deposition of coarser sediments during overflow or flooding of the streams. The size of natural levees is determined by the size of the streams. The natural levees in the study area range in height from 5 feet near the mouths of the Vermilion and the Teche to 10 feet in the vicinities of New Iberia and Abbeville. Northward near Lafayette they reach 25 feet and reach a maximum height at Port Barre.

(b) Backswamp. Beyond the natural levees along Bayou Teche and the Vermilion River the surface decreases to lower, poorly drained elevations. These areas usually have standing water most of the time and as a result consist of very fine clays.

(c) Meander scars. At one time the ancient Mississippi River flowed through Bayou Teche and at that time it meandered laterally back and forth within its floodplain. Some of these meander scars are still apparent on the landscape as ridges and swales in eastern Lafayette Parish and southern St. Landry Parish.

(d) Opelousas Escarpment. This feature is an escarpment or bluff which roughly parallels the course of Bayou Teche a distance of 2 to 5 miles west of the bayou. It runs from New Iberia to a point north of Opelousas. It is a significant feature in that it forms a dividing line between the backswamps and levees to the east and the prairies to the west. This ridge increases in height from about 15 feet above the surrounding swamp at its southern end to almost 40 feet at its terminus north of Opelousas.

(e) Prairies. West of Opelousas Escarpment lie the flat eroded remains of a former delta of the Mississippi River system. On this flat surface are some depressions and ridges which vary in elevation from approximately 10 feet m.s.l. near Abbeville to about 60 feet m.s.l. north of Opelousas.

(f) Coastal marshes. The coastal parishes of Vermilion, Iberia, and St. Mary contain an abundance of marsh adjoining the Gulf of Mexico, Vermilion Bay, West and East Cote Blanche Bays, and Atchafalaya Bay. The marsh is predominately freshwater or intermediate but grades into brackish toward the Gulf of Mexico. Elevation of the coastal marsh is from sea level to 5 feet.

(g) Cheniers. Cheniers are isolated relict beaches now located in a marsh environment due to shoreline fluctuation. The old beaches developed through the depositional action of longshore currents and wave action. Fluctuation of the depositional process caused them to be stranded after marsh formed in front of them. Chenier au Tigre is one of the important cheniers in the study area.

c. Geologic formations. The stratigraphic chart of Fisk and others is included as Plate 1 to show general geologic formations for the region.

(1) Surface stratigraphy. Typical of the Gulf Coastal Plain are various surface deposits of deltaic and terrace sediments. These range from indurated sands and gravels to thick sequences of poorly consolidated peats and clays. Surface deposits are all of Quaternary age, which includes both the Pleistocene and Holocene, with the exception of a few areas overlying salt domes in the area.

(a) Pleistocene. In Louisiana four Pleistocene terrace levels have been mapped and in chronological sequence they are: Prairie (youngest), Montgomery, Bentley, and Williana (oldest). The terrace levels have been studied by many geologists, including Fisk, 1938 and 1944. Each terrace unit listed above consists of basal sands and gravels that are overlain by clays and silts. These are distinguishable from the unconsolidated Holocene (Recent) by their color and firmer texture. Of the four Pleistocene terraces only the Prairie is directly related to the river basins the project is concerned with, thus only the Prairie formation is discussed for this statement.

(b) Prairie formation. Fine-grained, clayey sandstones, fine to very fine sandy siltstones, and sandy pebble conglomerates. These beds are light grey, light brown or yellowish orange in color, and commonly have characteristic fluvial sedimentary structures.

(c) Holocene. Holocene or Recent deposits consist of a "substratum of sand and gravelly sand overlain by a topstratum of sand and silty sands. To the southwest of Bayou Teche ridge, marginal to the ancient Mississippi River entrenchment, fine grained Holocene deposits, consisting predominately of soft organic clays lie directly upon Pleistocene clays. The depth to the Pleistocene in the study area varies from a foot ot two in the vicinity of Franklin to more than 100 feet at the gulfward end of Wax Lake Outlet" (Skinner et al., 1972). These Recent deposits are mapped as:

1. Deltaic plain deposits - clays, silts, and sands
2. Backswamp deposits - clays with silts and silty clays
3. River meander deposits - clays and silts

QUATERNARY	Holocene	river deposits	river meander belt deposits backswamp desposits braided stream deposits deltaic plain deposits undifferentiated alluvium
	Pleistocene	terraces	Prairie terrace Montgomery terrace Bentley terrace Williana terrace
TERTIARY	Miocene	Grand Gulf Group	Citronelle Formation - - - - - - - - Fleming Formation /Harang Fauna (downdip) Catahoula Formation ? Chickasawhay Formation
	Oligocene	post-Vicksburg (downdip)	Anahuac Formation *Discorbis* Zone *Heterostegina* Zone *Marginulina* Zone Frio Formation / Hackberry Facies
		Vicksburg Group	Byram Marl Glendon Limestone Mint Springs Marl Forest Hill Sand
	Eocene	Jackson Group	Danville Landing beds Yazoo Clay Verda Member Tullos Member Moodys Branch Marl
		Claiborne Group	Cockfield Formation Cook Mountain Formation Sparta Formation Cane River Formation
		Wilcox Group	Carrizo Formation Sabinetown Formation Pendleton Formation Marthaville Formation (Largely undiff. in Louisiana)
	Paleocene	Midway Group	Midway Formation

STRATIGRAPHIC COLUMN

(after Fisk, 1938, 1940, 1944; LeBlanc, 1948; Kemp and LeBlanc, 1970; and Skinner, 1972)

PLATE 1
BAYOU TECHE, TECHE-VERMILION AND FRESHWATER BAYOU, LOUISIANA

STRATIGRAPHIC COLUMN

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

(2) Subsurface stratigraphy. Underlying the Quaternary surface sediments of the study region is a vast complex of Tertiary sedimentary strata. In the immediate vicinity of Bayou Teche, Vermilion River, and Freshwater Bayou the subsurface stratigraphy of the Tertiary is deeply buried. The Tertiary sandstones, clays, and shales are thinly covered in the areas overlying emergent salt domes. Here again, the strata do not outcrop nor are they exposed to view because of overlying Recent sediments. Surface mining and subsurface exploration for petroleum have yielded much data on the subsurface geology and paleontology of the general study area. The identification and correlation of the subsurface stratigraphy is based on the use of marker fossils or index micro-fossils rather than inference. For a complete study of the subsurface stratigraphy reference is made to the geologic column developed by Skinner (1972) after Fisk (1938; 1944) and others. The following is taken from previous statements for the area extracted mostly from Skinner (1972) to indicate the most recent geologic interpretation of the area.

(a) Oligocene Epoch.

1. Vicksburg Group. The Oligocene Vicksburg Group of sandy shales and lignitic clays varies in thickness from 200 to 250 feet on the surface in Central Louisiana outside the study area to as much as 1800 feet or more downdip in the subsurface section. In the immediate study area these beds lie deeper than normal drilling depths.

2. Post-Vicksburg Strata. Frio Formation is massive deltaic and marginal marine sands becoming more marine downdip and changing facies into a finer marine basal sand and overlying fossiliferous shale. The downdip lower shale sequence is termed Hackberry Facies (Skinner, 1972, p. 12).

Camerina sp. "zone"
Marginulina texana "zone"
Nonion struma "zone"

Petroleum is produced from the lower Frio Formation in the Bosco, Cankton, Krotz Springs, Lewisburg, North Cankton, and Port Barre fields in central and west central Louisiana. Anahuac Formation is transgressive marine deposits, thickening downdip into limy or sandy shales, marls, discontinuous or lenticular sands and, in places, hard white fossliiferous limestone. It is divided into three sub-surface biostratigraphic zones (Skinner, 1972).

(oldest)	Marginulina Zone	(lower)
	Marginulina vaginata	
	Marginulina howei	
(intermediate)	Heterostegina Zone	(middle)
	Heterostegina texana	

Heterostegina israelskyi
Lepidocyclina spp.
Operculinoides spp.
Oponides ellisorae
Textularia morninvegi
Marginulina idiomorpha
Bolivina perca
Heterostegina Zone (middle) downdip:
Siphogenerina fredsmithi
(youngest) Discorbis Zone (upper)
Discorbis gravelli
Discorbis nomada
Textularia teasi
Uvigerina howei
Lenticulina jeffersonensis

Petroleum from the Anahuac Formation has been recovered in the Bosco, Krotz Springs, and Port Barre fields in central Louisiana.

(b) Miocene Epoch. Grand Gulf Group-The Oligocene sediments are conformably overlain by silty clays, lenticular sands, and clays of Miocene age. These beds are poorly indurated and contain brackish-water fossils. The marginal sands interfinger downdip with silty clays and other deltaic sediments and southward with marine strata, thickening abruptly across hingelines of flexure into southwest Louisiana where the Miocene depocenter was situated (Skinner, 1972, pp. 2,8).

1. Chickasawhay formation (?). In some areas, especially to the west, Chickasawhay fossils are recognized near the lower Miocene boundary in the subsurface and the beds containing this fauna are separated from the underlying Vicksburg Group by a thin shale break (See Fisk, 1940, p. 146 and plate 6, opposite p. 140).

2. Catahoula formation. Massive deltaic sands, nonmarine siltstones, and intercalated sand lenses with abundant petrified wood fragments.

3. Fleming formation. Interfingering deltaic sands, silts, and clays with tongues of brackish-water silts and clays (3800 feet thick in Evangeline Parish).

d. Economic geology. There are a number of producing oil and gas fields in the six-parish area (Plate 2). Some parishes also have salt, sand, and gravel mines. Table 2 indicates the importance of mineral resources in the area although none of these is produced in the immediate area of the survey.

OIL AND GAS FIELDS IN THE STUDY AREA

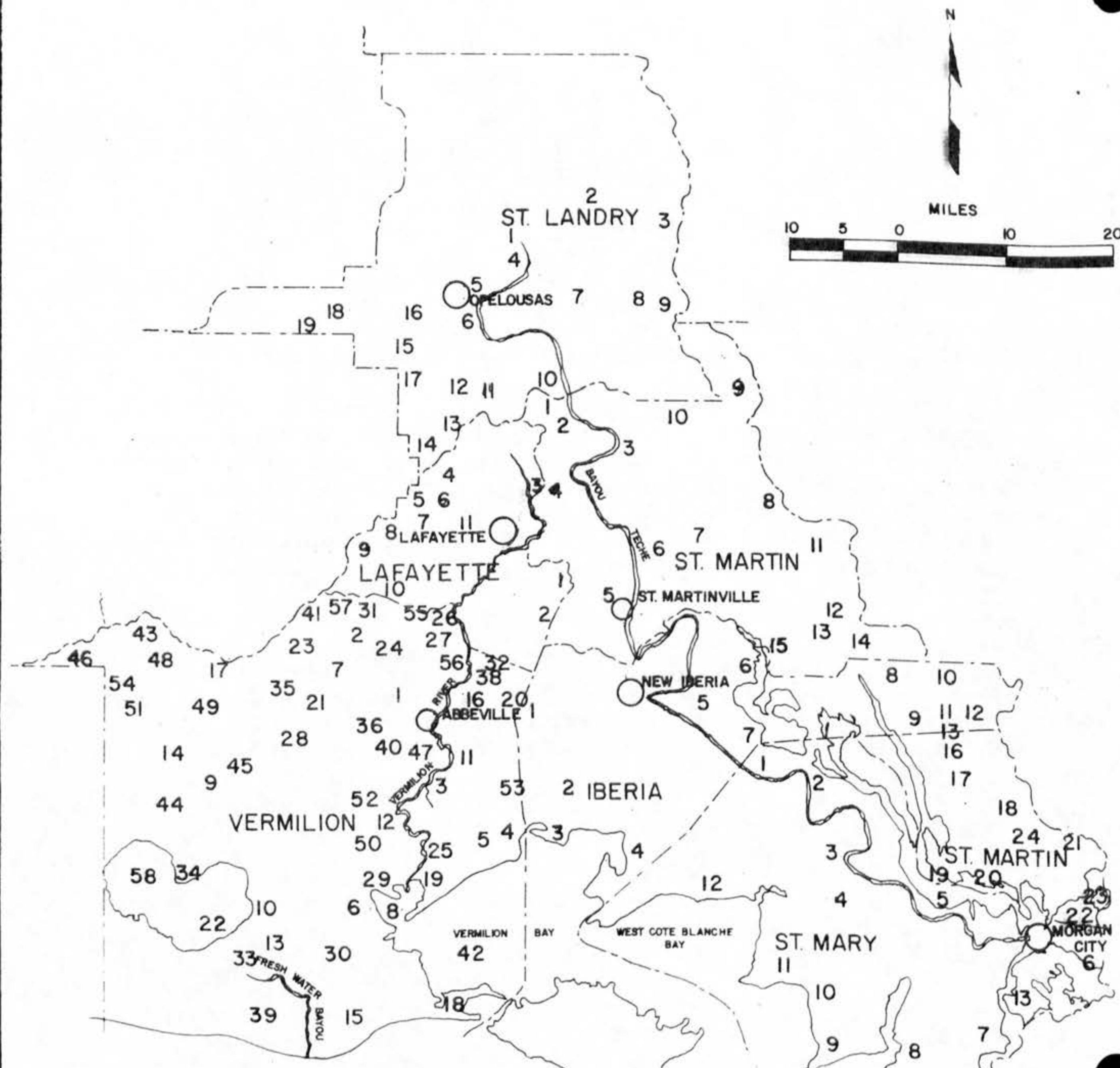

PLATE 2
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

OIL AND GAS FIELDS

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

LEGEND FOR PLATE 2

Iberia Parish

1. Jefferson Island
2. Avery Island
3. South Tigre Lagoon
4. Weeks Island
5. Iberia
6. Fausse Pointe
7. Loisel
8. Bayou Pigeon
9. Big Bayou Pigeon
10. East Bayou Pigeon
11. North Bayou Long
12. Bayou Postillon
13. Bayou Long

Lafayette Parish

1. Broussard
2. Cade
3. Anse La Butte
4. North Ossun
5. South Bosco
6. Ossun
7. Scott
8. Duson
9. Southeast Rayne
10. Ridge
11. Lafayette

St. Landry Parish

1. Washington
2. Palmetto
3. Melville
4. Washington South
5. Opelousas
6. Naka
7. Port Barre
8. Bayou Courtableau
9. Krotz Springs
10. Arnaudville
11. Grand Coteau
12. Shuteson
13. North Cankton
14. Bosco
15. Lewisburg
16. Lawtell
17. South Lewisburg
18. Savoy
19. Bayou Mallet

St. Martin Parish

1. Arnaudville
2. South Arnaudville
3. Cecilia
4. Anse La Butte
5. St. Martinville
6. Section 28
7. Lake LaRose
8. Bayou Boullion
9. Happtown
10. Plumb Bob
11. Lake Mongoulois
12. Bayou Chene
13. Bayou Crook Chene
14. Lake Chicot
15. Fausse Pointe
16. Bayou Long
17. Mystic Bayou
18. West Lake Verret
19. Duck Lake
20. American Island
21. Belle River
22. Simon Pass
23. East Lake Palourde
24. North American Island

LEGEND FOR PLATE 2 (Cont'd)

St. Mary Parish

1. Jeanerette
2. Charenton
3. Franklin
4. Garden City
5. Patterson
6. Ramos
7. Sweet Bay Lake
8. Belle Isle
9. Horseshoe Bayou
10. Bayou Sale
11. Bayou Carlin
12. Cote Blanche
13. Bateman Lake

Vermilion Parish

1. Abbeville
2. Andrew
3. Bancker
4. Bayou Hebert
5. Boston Bayou
6. Buck Point
7. Cossinade
8. East Buck Point
9. East Florence
10. East White Lake
11. Erath
12. Esther
13. Fire Island
14. Florence
15. Fresh Water Bayou
16. Grosse Isle
17. Gueydan
18. Hell Hole Bayou
19. Intracoastal City
20. Jefferson Island
21. Kaplan
22. Lac Blanc (White Lake)
23. Leleux
24. Leroy
25. Live Oak
26. Maurice
27. Milton
28. Mulvey
29. North Buck Point
30. North Fresh Water Bayou
31. North Leroy
32. North Parcperdue
33. North Pecan Island
34. North White Lake
35. Northwest Kaplan
36. Nunez
37. Outside Island
38. Parcperdue
39. Pecan Island
40. Perry
41. Perry Point
42. Redfish Point
43. Riceville
44. South Florence
45. South Kaplan
46. South Lake Arthur
47. South Perry
48. South Riceville
49. Southeast Gueydan
50. Southwest Esther
51. Southwest Gueydan
52. Theall
53. Tigre Lagoon
54. West Gueydan
55. West Maurice
56. West Parc Perdue
57. West Ridge
58. West White Lake

TABLE 2

VALUE OF THE MINERAL PRODUCTION IN STUDY AREA, 1970

Parish	Value in '000' s	Minerals produced in order of value
Iberia	$216,385	Petroleum, natural gas, salt, natural gas liquids, clays.
Lafayette	$20,887	Natural gas, petroleum, natural gas liquids, sand and gravel, clays.
St. Landry	$48,283	Natural gas, petroleum, natural gas liquids, sand and gravel.
St. Martin	$88,187	Petroleum, natural gas, salt, natural gas liquids, sand and gravel.
St. Mary	$473,513	Petroleum, natural gas, natural gas liquids, salt, shell, lime, sand and gravel
Vermilion	$311, 444	Natural gas, petroleum, natural gas liquids, sand and gravel.
Total	$1,158,699	

Source: United States Department of the Interior, Minerals Yearbook

e. Ground water conditions. (From Dept. of Conserv. and Dept. pf Pub. Wks. State of La. 1967 and Dept. of Pub. Wks., State of La. 1971). The principal aquifer in the project area is the Chicot, a wedge of sand, gravel, and clay about 100 feet thick in the northern part of the area and up to 7,000 feet thick under the Gulf of Mexico; it dips toward the south and southeast. Water in this aquifer is hard, with sodium, calcium, and bicarbonate ions dominant; in many places there is a high iron content locally. The flow within the aquifer was originally toward the south but heavy withdrawals for irrigation and industry have changed the direction of flow so that now water from the south and east flows toward areas of heavy use. The saline-fresh interface (the 250 p.p.m. line) in southwest Louisiana is moving northward at a rate of 30 to 200 feet per year. There is no fresh water in this aquifer in the southernmost part of Vermilion Parish and southeastern St. Mary Parish.

f. Unusual geologic features. The most unusual significant features in the area are the Five Island salt domes (Avery, Weeks, Jefferson, Cote Blanche, and Belle Isle). These are located along the coast in the parishes of Iberia and St. Mary. Probably the best known is Avery Island because it was the first salt mine (1862) in the western hemisphere. The elevated topography of the emergent salt domes presents a spectacular contrast with the surrounding low-lying marsh. Production of salt is of major importance in some of these domes, but there is also significant production of oil and gas associated with them. Avery and Jefferson islands attract visitors nationwide with the Jungle Garden and Rip Van Winkle Gardens respectively.

2.03 HYDROLOGIC ELEMENTS

a. General hydrology of total study area. General sources for information were Kazman (1965) and Domingue, Szabo and Associates (1974). The Vermilion River and Bayou Teche have a total drainage area of approximately 2500 square miles. These two streams are distributaries of the complex Bayou Rapides-Bayou Cocodrie-Bayou Courtableau-West Atchafalaya Basin Protection Levee borrow pit system. The watershed served by both streams lies in south central Louisiana and extends 150 miles from the Red River southeasterly to the Gulf of Mexico. The upper 1600 square miles are drained primarily by Bayous Rapides, Boeuf, and Cocodrie on the west and the upper portion of the West Atchafalaya Basin Protection Levee (WABPL) borrow pit on the east. Bayou Courtableau intercepts this area near the center of the watershed. Generally, about 20% of the flow of Bayou Courtableau enters Bayou Teche at Port Barre, the balance turning down the WABPL borrow pit to rejoin the Teche at Charenton where it is diverted to West Cote Blanche Bay through the Charenton Drainage and Navigation Canal. Drainage is diverted from the

watershed at several points by means of control structures such as Alexandria, Marksville, Bayou des Glaises, and the Darbonne, Courtableau, and Charenton control structures. Freshwater Bayou navigation canal is 12 by 125 feet and extends from the Gulf Intracoastal Waterway at mile 161.2 west of Harvey Lock to the 12 foot contour in the Gulf of Mexico near Freshwater Bayou. Connections exist between Freshwater Bayou and Vermilion Bay through Schooner and Belle Isle Bayous. Construction of Freshwater Bayou was authorized by the River and Harbor Act of 14 July 1960, House Document 435, 86th Congress, 2nd session.

b. Hydrology of the project area.

(1) Major tributaries with estimates of lengths and surface areas. Bayou Teche is a comparatively small stream occupying the highest part of a very large alluvial ridge which is approximately the same size as the Mississippi River. All local drainage is away from the stream and consequently it functions as a flume, converging drainage from Bayou Courtableau to the Vermilion and lower Teche systems. Bayou Teche is a 124 mile long waterbody extending from Bayou Courtableau at Port Barre to its confluence with the Atchafalaya River at Berwick, Louisiana. The elevations of the ridge near the bayou range from 30 feet above sea level at Port Barre to 20 feet at New Iberia and 10 feet at Franklin. The principal features of the Teche-Lower Atchafalaya system are the Berwick Locks below the confluence of Bayou Teche and the Lower Atchafalaya River; Wax Lake Outlet, which diverts water from the Atchafalaya Basin Floodway across Bayou Teche; the east and west Calumet floodgates; the Hanson Canal and lock on the right descending bank; the Charenton Drainage and Navigation Canal which conveys the WABPL borrow pit flow through and across Bayou Teche; the Loreauville Canal on the left descending bank which connects the Teche to Lake Fausse Pointe and WABPL borrow pit; Keystone Lock and Dam; Ruth Canal and control structures on the right bank which connect the Teche with the Vermilion River; and Bayou Fusilier on the right descending bank which also connects the Teche to the Vermilion River. The Vermilion River has a well defined basin which drains a 652 square mile area lying between the Mermentau watershed on the west and the Bayou Teche ridge on the east. The Vermilion River also functions as a distributary of Bayou Teche. Bayou Fusilier, a small alluvial stream about 6 miles in length, connects the Vermilion River at its head with Bayou Teche at Arnaudville. An average of about 25 percent of the flow of Bayou Teche is normally diverted through this channel into the Vermilion, although a small earth dam prevents flow at stages below about 10 feet above sea level. Runoff from heavy local storms in the upper Vermilion watershed occasionally causes a reversal of flow in Bayou Fusilier towards Bayou Teche.

The Ruth (or Evangeline) Canal, about 4 miles long, connects Bayou Teche with the Vermilion River. It was built by private interests for diverting a portion of the Teche flow to the Vermilion for rice irrigation. Flow is regulated by a reinforced concrete control structure with three manually operated gates. The Vermilion River can be separated into two distinct sections: Upper Vermilion River and Lower Vermilion River. The Upper Vermilion River, about 12.4 miles long, runs south to the city of Lafayette, Louisiana. It has a broad valley and its banks are only slightly higher than the adjacent lands. The stream receives drainage waters from the adjacent watershed at several points where tributary streams enter the river. The Lower Vermilion River begins at Lafayette and ends at Vermilion Bay. It has high banks and a well defined stream valley. The Intracoastal Canal adds drainage waters from adjacent parishes to the waters of the Vermilion River at 2.2 miles and 3.5 miles above its mouth. Below Abbeville, Louisiana, the Vermilion River is tidal. The mean range of normal tides at the mouth is 10 inches. The maximum variation of water level in the lower reaches during hurricanes is 8-10 feet. The elevation of the Vermilion watershed ranges from 1 foot above mean sea level near the mouth, to 15 feet above mean sea level at Abbeville, to 40 feet above mean sea level at Lafayette, and down to 15 feet above mean sea level in the Upper Vermilion River. Freshwater Bayou is a navigational channel providing a waterway mainly for servicing oil and fishing interests in the Gulf of Mexico. The waterway, approximately 23 miles in length, utilizes the Schooner Bayou Cutoff and Schooner Bayou for a distance of about 3.9 miles; a land cut for about 2 miles to Six Mile Canal; then along the latter for a distance of 4.1 miles; then along Belle Isle Canal for 5.9 miles to Freshwater Bayou; and, finally 4 miles to the gulf shoreline. The off-shore channel is 3.22 miles long. Building a system of offshore jetties was authorized to prevent channel shoaling. When justified, the jetties will be constructed to the 6-foot contour of the Gulf of Mexico. A lock 84 feet wide, 600 feet long, and 16 feet deep is located in the vicinity of Beef Ridge at approximately mile 1.5. Channel levees constructed of dredged material extending gulfward of the lock from mile 0 to mile 1.4 protect the adjacent areas from flooding and salt water intrusion and prevent excessive drainage of the marsh.

(2) Water quality of surface waters. Water quality parameters (Domingue, Szabo and Assoc., 1974; Univ. Southwestern Louisiana/National Science Foundation Project, 1974) for Bayou Teche, Vermilion River and Freshwater Bayou Canal are presented in Appendix D Tables 1 through 3 . The water quality parameters listed were measured from 1971 to 1972 and in 1974 and are typical of values for the years 1971-1975. The maximum, minimum, and mean values are listed. Table 1 of Appendix D shows

water quality parameters for the Vermilion River at Perry, Louisiana. Table 2 of Appendix D shows parameters typical of the Teche Bayou measured daily at Wax Lake Outlet at Calumet. The monthly values shown were calculated from daily recordings for temperature, conductivity, DO, and pH. Daily readings for temperature and chloride content were used to calculate the entries of Table 3 of Appendix D for Freshwater Canal above Freshwater Bayou Lock. Stream discharge and gage data are presented in Tables 4 and 5, Appendix D for Bayou Teche and Vermilion River. These data are averages for measurements for a period ranging from 1965-1973 and are taken from recent work by Domingue, Szabo and Associates, Inc., an engineering consultant firm located in Lafayette, Louisiana. Samples were collected for the present work in water quality analysis during a period from May 8 to May 20, 1975. Samples of water were collected with a Kemmerer water sampler at a depth of 1.5 meters below the surface of the water at the middle of the respective stream for each site. The sites sampled for each stream are shown on Plates 3 and 4. Two gallons were collected at each site for chemical, metallic, and pesticide analysis. In addition, a 300 ml standard BOD bottle was filled at each site and the contents were prepared for dissolved oxygen (DO) determination--fixed with manganese sulfate, alkaline iodine azide, and concentrated sulfuric acid and then placed with the two-gallon containers on ice (4°C). Samples were kept in this condition until arrival at the U.S.L. laboratory where transfer was made to refrigerators. The DO concentration was determined immediately upon arrival at the lab using the Oxide Modification of the Winkler Method as described in Standard Methods (American Public Health Assoc., 1971). Other tests (Standard Methods, 1971) made on the water samples collected were: Chemical Oxygen Demand (COD), Total Kjeldahl Nitrogen (TKN), Volatile Suspended Solids (VSS), Total Suspended Solids (TSS), Oil and Grease (O&G), and Total Phosphate (PO_4). Also, determinations of trace quantities of mercury (Hg), lead (Pb), zinc (Zn), arsenic (As), cadmium (Cd), copper (Cu), chromium (Cr), and nickel (Ni) were made. Heavy metal determinations were made using a combination of atomic absorption spectroscopy and X-ray fluorescence analysis. Water samples were filtered using 0.45 micron pore size filters. Some parameters listed above were determined using the filtrate and/or solution (for dissolved components). The results of these tests of water samples are shown in Appendix D tables 6-20. Sediment samples were collected using an Eckman dredge. The samples were taken from the middle of the streams (Vermilion, Teche, and Freshwater Bayou) at the same sites at which water samples were collected. The sediment parameters determined were: Chemical Oxygen Demand (COD), Total Kjeldahl Nitrogen (TKN), Volatile Suspended Solids (VSS), Oil and Grease (O&G), and eight heavy metals, Hg, Pb, Zn, As, Cd, Cr, Ni, and Cu. Using sediment samples and river water, a Standard Elutriate Test (Environmental Protection Agency, 1971) was performed from

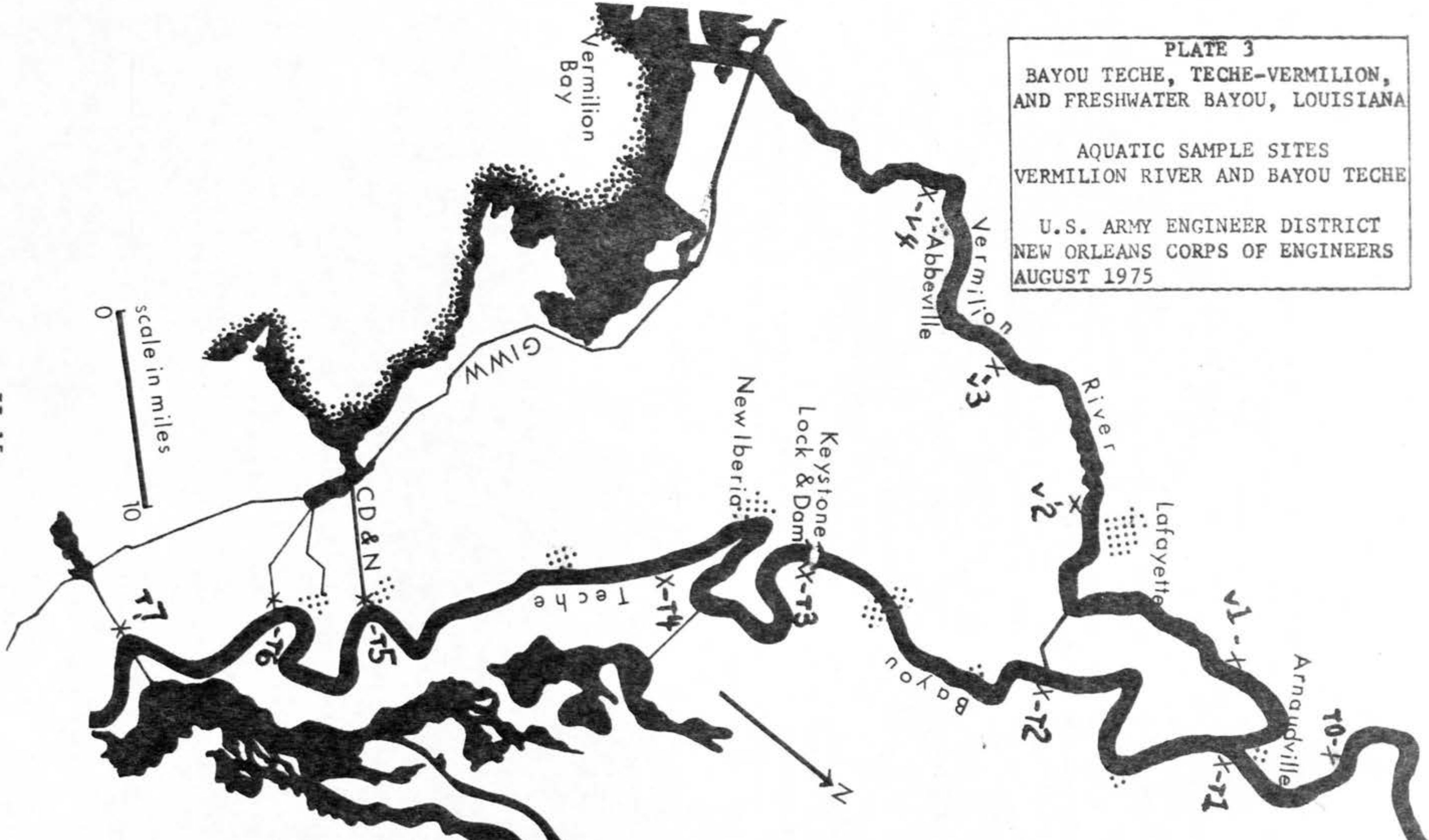

PLATE 3
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

AQUATIC SAMPLE SITES
VERMILION RIVER AND BAYOU TECHE

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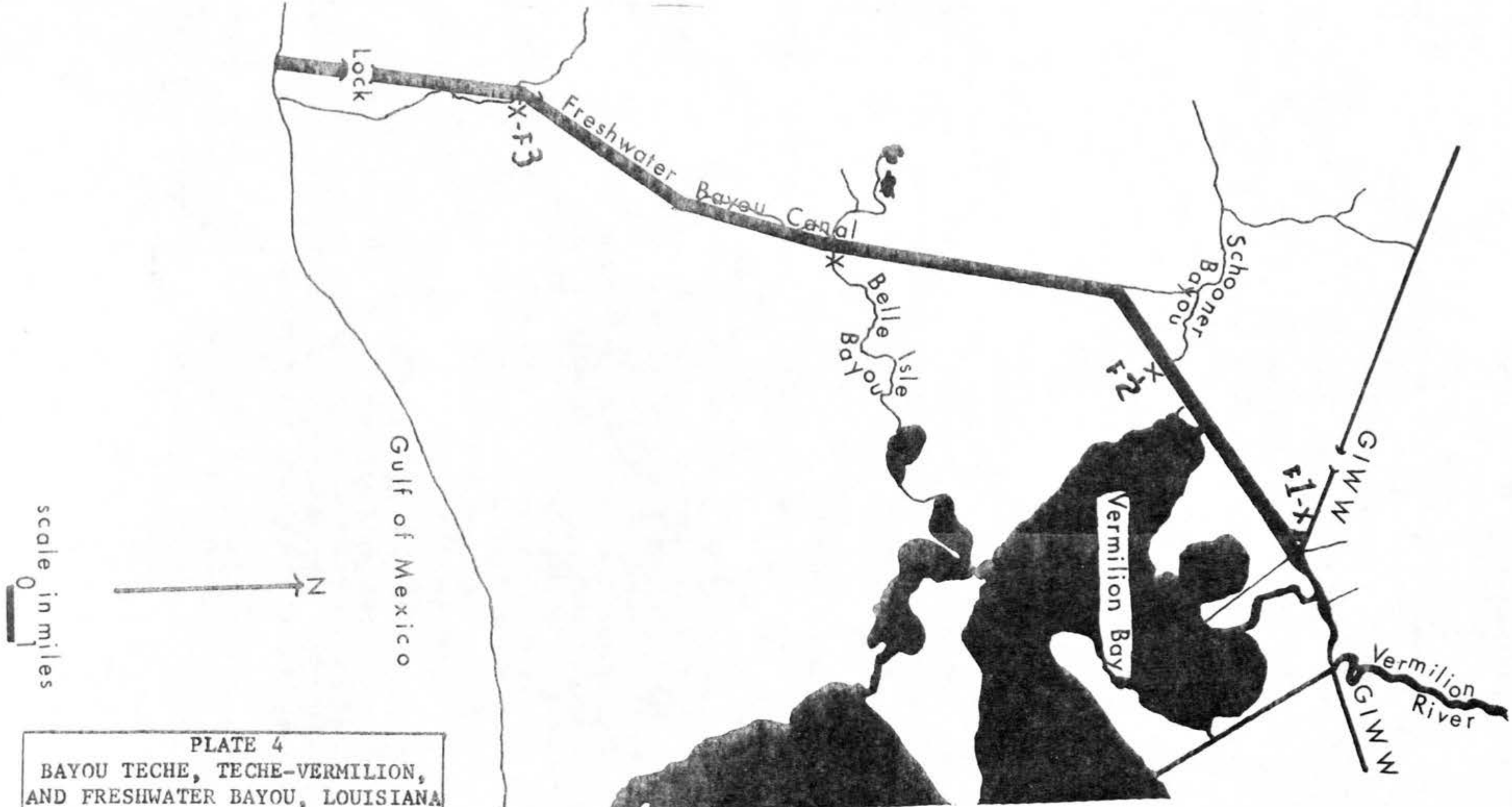

PLATE 4
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

AQUATIC SAMPLE SITES
FRESHWATER BAYOU CANAL

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which the following paramenters were determined: Chemical Oxygen Demand (COD), Total Kjeldahl Nitrogen (TKN), Hg, Pb, Zn, As, Cd, Cr, Ni, and Cu. Standard Elutriate and sediment analyses are presented in Appendix D Tables 6-35. The results presented in Tables 6-20, Appendix D generally show concentrations of heavy metals which are well below the proposed EPA maximum allowable levels. A glaring exception is the 0.2 mg/l of mercury in the sediment of the Teche at Leonville. However, the elutriate test at this location shows no dissolved components of mercury. In addition, a substantial concentration (1.0 mg/l) of copper was found in the unfiltered water at this location. Since no appreciable copper was found in the filtered water, this indicates copper presence only in the suspended solids. The copper is also exhibited (0.08 mg/l) somewhat in the elutriate test for the Leonville station. In most cases, the elutriate test for heavy metals did not furnish substantive conclusions due to generally low concentrations. Thus, the tables indicate acceptable concentrates for the standard elutriate test at most locations. The standard elutriate test was also made at all stations sampled for Chemical Oxygen Demand (COD) and Total Kjeldahl Nitrogen (TKN). Since EPA has not yet established maximum standards for these parameters, the results of the standard elutriate test were considered in absolute terms. Therefore, most stations show an elutriate criteria factor greater than 15 for TKN. Most tests for COD indicate favorable concentrations with one exception--the Freshwater Bayou station at Freshwater Canal. Under present regulations, the U.S. Army Corps of Engineers must use the "Environmental Protection Agency Criteria for Evaluation of Permit Application for Ocean Dumping," (40 CFR 227; 38 FR 28618; October 15, 1973) to evaluate dredging projects in navigable waters (i.e., the Standard Elutriate Test). This procedure is being followed until guidelines are promulgated by the Corps of Engineers and EPA for navigable waters. However, draft "Navigable Waters Procedures and Guidelines for Disposal of Dredged or Fill Material" was recently published in the Federal Register (40 CFR 230 and 33 CFR 209; 40 FR 19766; May 6, 1975). The Navigable Waters Criteria permits dilution of results of the Elutriate Test by a factor of 10 (the criteria factor is now 15 instead of 1.5). The criterion is used in the present study and is employed in Tables 6 through 20 in Appendix D.* Other parameters shown on Tables 6-20 of Appendix D are Total Suspended Solids in unfiltered water, Volatile Suspended Solids in unfiltered water and sediment, Oil and Grease in unfiltered water and sediment, and Total Phosphate in unfiltered water.

(a) Pesticide residue analysis. Pesticides are comprised of numerous organic compounds that are used for specific and general purposes. Included are the chlorinated hydrocarbons and organophosphorus compounds. They have been reported as generally useful in improving agricultural yields by destroying insects harmful to crops and also useful in protecting

* Subsequent to the preparation of this EIS, Final interim guidelines for discharge of dredged or fill material in navigable waters have been published by EPA in the Federal Register on 5 September 1975. A discussion of these guidelines with respect to water quality is attached as Appendix E.

wooden structures from termite damage. Pesticides differ widely in chemical and toxicological characteristics, and their biochemistry is only partially known. Toxicity to man and biodegradability vary considerably between compounds and because of these factors, determining pesticide residues in the environment is essential. The present study to determine pesticide residues was initiated for the Vermilion River, Bayou Teche and Freshwater Canal. In particular, the study involved determining to what extent dredging selected portions of these streams would redistribute certain pesticide residues and to what extent this redistribution would affect the environment. Therefore, water and sediment samples were collected for pesticide analysis on Freshwater Bayou, Bayou Teche and the Vermilion River at the same sites used for water-quality sample collection. The samples used for pesticide analysis were collected within a week from the water quality samples. One gallon of river water and one-half gallon of sediment were collected at each site for the analysis. The pesticides for which the samples were analyzed are: lindane, DDT, DDE, DDD, heptachlor, heptachlor epoxide, toxaphene, methoxychlor, dieldrin, aldrin, ethion, chlordane and endrin. These parameters were determined as components dissolved in river water, and as components of sediment and standard elutriate. Techniques of gas chromatography were used to analyze the samples. Water samples were collected at a depth of 1.5 meters (about 5 feet) below the surface of the water at all sites selected for Freshwater Bayou, Bayou Teche and the Vermilion River. A kemmerer of one liter volume was used to collect the water. The water was transfered from the kemmerer to one gallon glass containers with aluminum foil covered stoppers and stored in ice. The containers were subsequently transferred to a refrigerated room maintained at 4°C and kept there until analysis began. At each site, about one-half gallon of sediment was collected with an Eckman dredge and also deposited in glass containers with aluminum covered caps. Sediment samples were stored on ice and transferred to a refrigerator room at 4°C. The sediment was collected at mid-stream at each site. Sample preparation for dissolved pesticide determinations in river water was done by filtering 1.7 liters of water at each site with 0.45 micron pore size filter paper. The clear solution was again stored at 4°C until ready for analysis. The remainder of the river water and some of the sediment collected at each corresponding site were used to prepare 1.7 liters of a standard elutriate sample. Preparation of elutriate samples is outlined in Appendix D of this report. An amount of sediment for each site was freeze dried and 100 grams were stored in a freezer until ready for analysis. A Packard 874 gas chromatograph with an electron capture detector was used to analyze the filtered water, sediment and elutriate samples for pesticide residue at each site. The techniques of gas chromatography as applied to pesticide residue analysis can be found in detail in Ref.1. Concentrated 100 milligram quantities of all thirteen pesticides

listed earlier were obtained from the Environmental Protection Agency, Quality Assurance Section, Research Triangle Park, North Carolina. From these concentrations, standards were made from which qualification of the pesticide residues in the actual samples were determined in units of milligrams per liter (mg/l). The results of the pesticide analyses in milligrams per liter (mg/l) are shown in Tables 21 through 35 (Appendix D). A separate table is given for each site samplei along with the date on which the samples were collected. An interesting feature of the results is that at no station measured does the standard elutriate test show an unacceptable concentration of pesticides, although there are pesticide components in the sediment and dissolved in the river water. For example, stations along the Vermilion River contain measurable concentrations of chlordane dissolved in the water and concentrations of DDD, DDE, and DDT in the sediment, but nothing in the elutriate test. In particular, the Pinhook Bridge station (Table 22) exhibits 0.080 mg/l of DDT in the sediment which is relatively high in comparison to similar measurements at other stations. Table 27 shows pesticide residue data for Bayou Teche at Ruth Canal. An interesting feature of these data is the relatively high concentration of DDD (0.789 mg/l) in the sediment at this station. Also at this station, a relatively high concentration of chlordane exists as dissolved component in the water. No pesticide concentrations were detectable with our instruments in the Freshwater Canal. The conclusion reached with the results presented in Tables 21-35 is that although no appreciable leaching out of the pesticide from the sediment is evident via the elutriate test, nevertheless, there is some concern in depositing on land the sediment in the vicinity of the Ruth Canal on the Teche and Pinhook Bridge on the Vermilion. This conclusion is based on the assumption that the measured pesticide concentrations at these stations are unusually high. However, no EPA criteria exists on which to base such assumptions.

(3) Uses of surface water. The uses of surface water of the project area are for navigation, fishing, limited recreational, waste disposal and water supply as indicated in Table 3. The State of Louisiana has established two classifications of streams and other bodies of water according to surface water uses (State of Louisiana Water Quality Criteria, Louisiana Stream Control Commission, 1973). Table 3 shows the use classification and water quality criteria for the project area as specified by the Louisiana Stream Control Commission.

(a) Class A: Water contact recreation and other uses (Primary Contact). This category is intended for uses in which the human body may come in direct contact with the raw

TABLE 3

PROJECT SURFACE WATER USES AND WATER QUALITY CRITERIA

Stream Description	√Water Uses				Criteria						
	Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Domestic Raw Water Supply	Chloride (mg/1) Not to exceed	Sulphate (mg/1) Not to exceed	Dissolved Oxygen (mg/1) Not less than	pH Range	Bacteria standard	Temperature °C	Total dissolved solids (mg/1) Not to exceed
Bayou Teche--Headwaters to Keystone Locks and Dam	X	X	X	X	43	32	5.0	6.0 to 8.5	1 *	** 32	220
Bayou Teche--Keystone Locks and Dam to Charenton Canal	X	X	X	X	80	50	5.0	6.0 to 8.5	1	32	350
Bayou Teche--Charenton Canal to Wax Lake	X	X	X	X	125	68	5.0	6.0 to 8.5	1	32	500
Vermilion River--Origin to GIWW	X	X	X		230	36	5.0	6.0 to 8.5	1	32	350
Vermilion River--GIWW to Vermilion Bay		X	X				4.0	6.5 to 9.0	1	35	
Open Coastal Waters--Freshwater Canal	X	X	X				5.0	6.5 to 9.0	+ 4	32	

* Standard #1 - Primary Contact Recreation

** Maximum values obtained from existing data

\+ Standard #4 - Shellfish propagation waters

water to the point of complete body submergence. The water may be used for swimming, water skiing, skin diving, as a raw water source for public water supply, support and propagation of aquatic fish and wildlife, agriculture, industry, and navigation.

(b) Class B: Fish, wildlife and other aquatic and semi-aquatic life (Secondary Contact). This is a category consisting of a surface raw water source, suitable for the growth and propagation of fish, other aquatic and semi-aquatic life, both marine and fresh water; water fowl, fur bearers; and wildlife. This water may be used for warm water fish habitat, wildlife habitat, and other similar uses. It is also suitable for secondary water contact recreation such as fishing, wading, boating, or activities where ingestion of water by humans is not probable.

(4) Stages, flows (maximum, average, minimum). The mean, maximum, and minimum discharge for Vermilion River and Bayou Teche are given in Appendix D . Mean gage readings are also included.

(5) Tidal effects. Tidal effects in the area are in the lower section of Vermilion River and Bayou Teche, and the Freshwater Canal. The tides are semi-diurnal. The mean range of tides is 1.1 feet and the diurnal range of tides is 1.6 feet. Charenton Canal at Baldwin, Louisiana, has a tidal range of 0.4 feet. Severe hurricanes sometimes raise the gulf level over 10 feet, and during the winter season strong northerly winds may depress the water level as much as 3 feet.

2.04 BOTANICAL ELEMENTS

a. General botanical description of area. Previous botanical studies pertinent to the project area include, for example, those of Allen (1975); Brown (1945); Chabreck (1972); Clark (1970); Joyce (1974); Lasseigne (1973); Lemmon (1966); Reese and Thieret (1966); and Thieret (1972 a,b). These studies give a general view of the upland and marsh vegetation, and detailed perspectives of major plant groups that are prominent in the project area. The project area includes a fairly diverse assemblage of vegetation types ranging from uplands along the upper reaches of the Vermilion River through hardwood bottoms to fresh or brackish marsh vegetation near the coast. There is no pine forest in the project area. Much of the area (virtually all that is suitable) is under regular and intensive cultivation for annual crops and pasturage. In the upper stretches of the Vermilion River and Bayou Teche, strips of forest occur along the margins of the streams and in certain areas the forest may extend inland to some extent. For the most part, however, the land away from the streams is under cultivation. In the vicinity of towns and cities along the Teche and Vermilion, much of the bank area is occupied by homes and camps. In the lower reaches of the Vermilion, swamp forest grades into open marsh with woody vegetation present only on natural levees and dredged material banks, and on cheniers. Those areas of the lower reaches of Bayou Teche not utilized for urban and agricultural purposes are dominated by swamp forest, and most of Freshwater Bayou runs through open intermediate and brackish marsh; the mouth is through Saline marsh (Chabreck, 1972). In general, the higher, inland portions of the project area that are not under cultivation support a residual upland hardwood forest that grades into swamp forest and then marsh as the elevation decreases.

b. Hardwood bottoms. Well-developed hardwood bottoms occur along the Vermilion River north of Lafayette, and in the vicinity of Palmetto Island, south of Abbeville, as well as along Bayou Teche. There are no hardwood bottoms on Freshwater Bayou (see Plates 5 to 7). Along Bayou Teche, there is a narrow but well-developed floodplain forest between Arnaudville to the north and the Ruth Canal, just south of Breaux Bridge. This floodplain is characterized primarily by dense stands of water elm and swamp privet. Roughleaf dogwood and black willow are also prominent in this forest. From the Ruth Canal south to the Keystone Lock and Dam, the static water level created by the dam has eliminated the floodplain as a vegetational feature. Below the dam a narrow floodplain forest is again a feature. Between Franklin and Wax Lake Outlet are isolated stands of tupelo gum and bald cypress, as well as narrow strips with black willow, live and water oak, Drummond red maple, sycamore, cottonwood, tallow tree, and palmetto.

PLATE 5
BAYOU TECHE, TECHE-VERMILION, AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
BAYOU TECHE

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

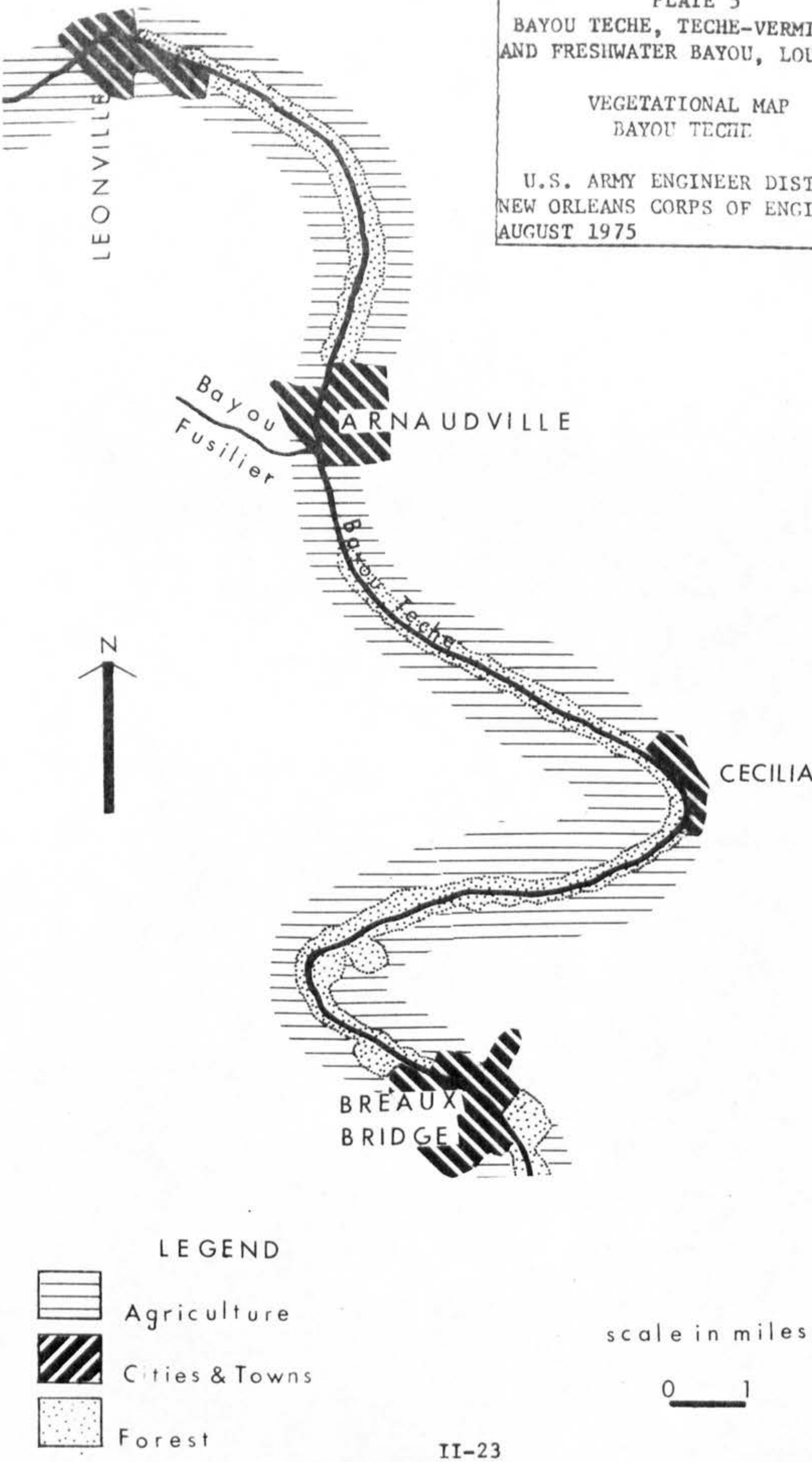

PLATE 5, Cont'd
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
BAYOU TECHE

U.S. ARMY ENGINEER DISTRICT
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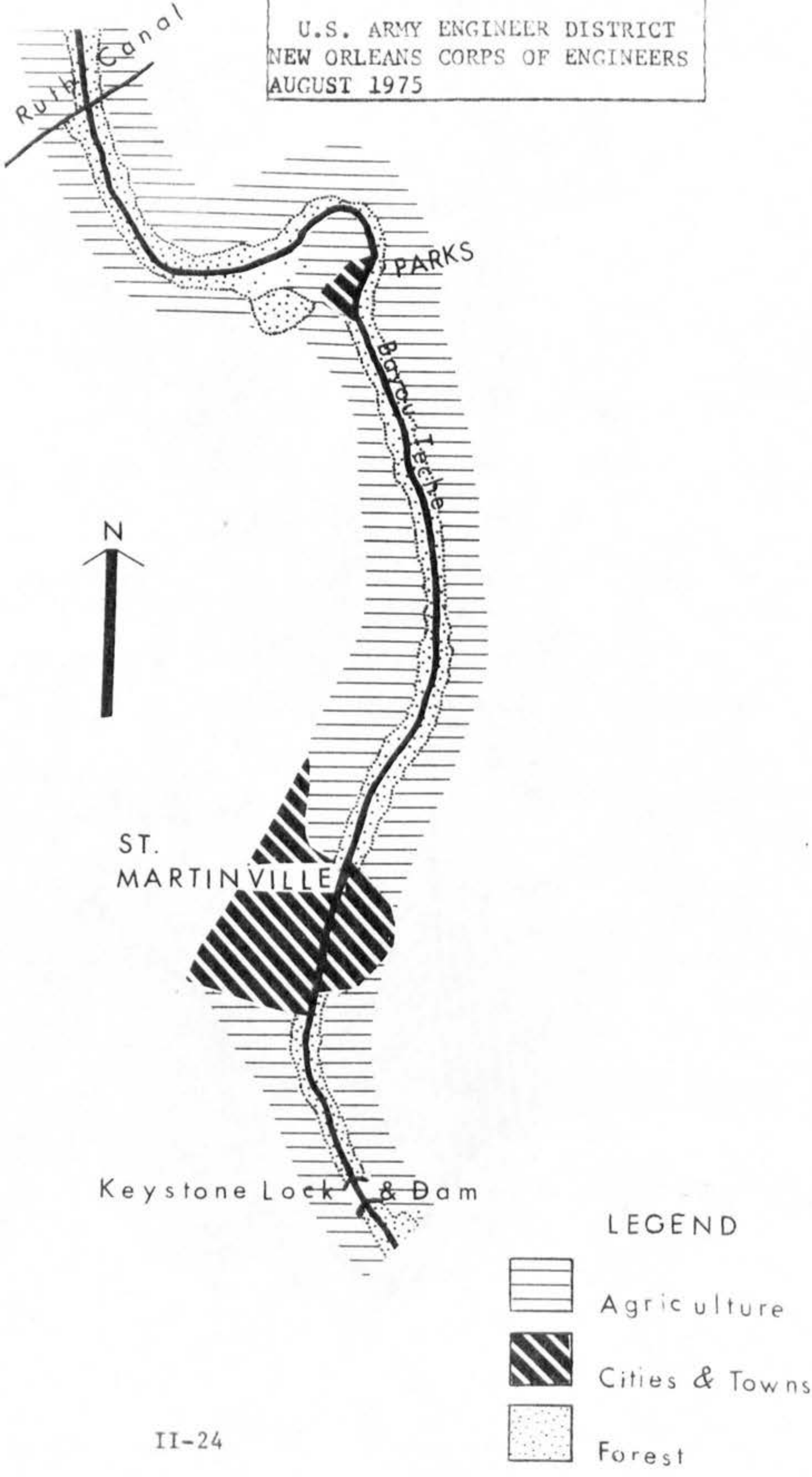

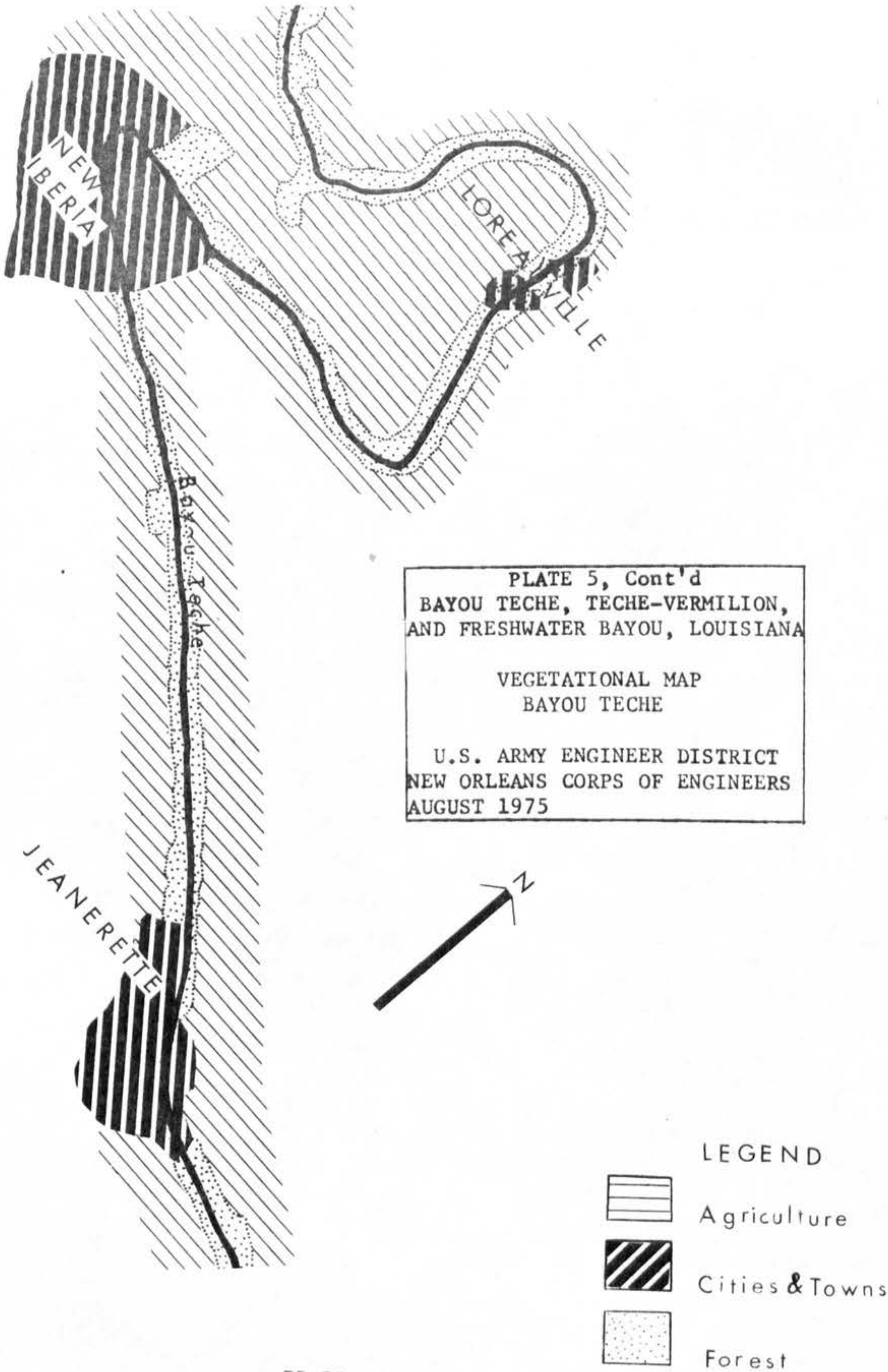

PLATE 5, Cont'd
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
BAYOU TECHE

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

PLATE 5, Cont'd
BAYOU TECHE, TECHE-VERMILION
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
BAYOU TECHE

U.S. ARMY ENGINEER DISTRICT
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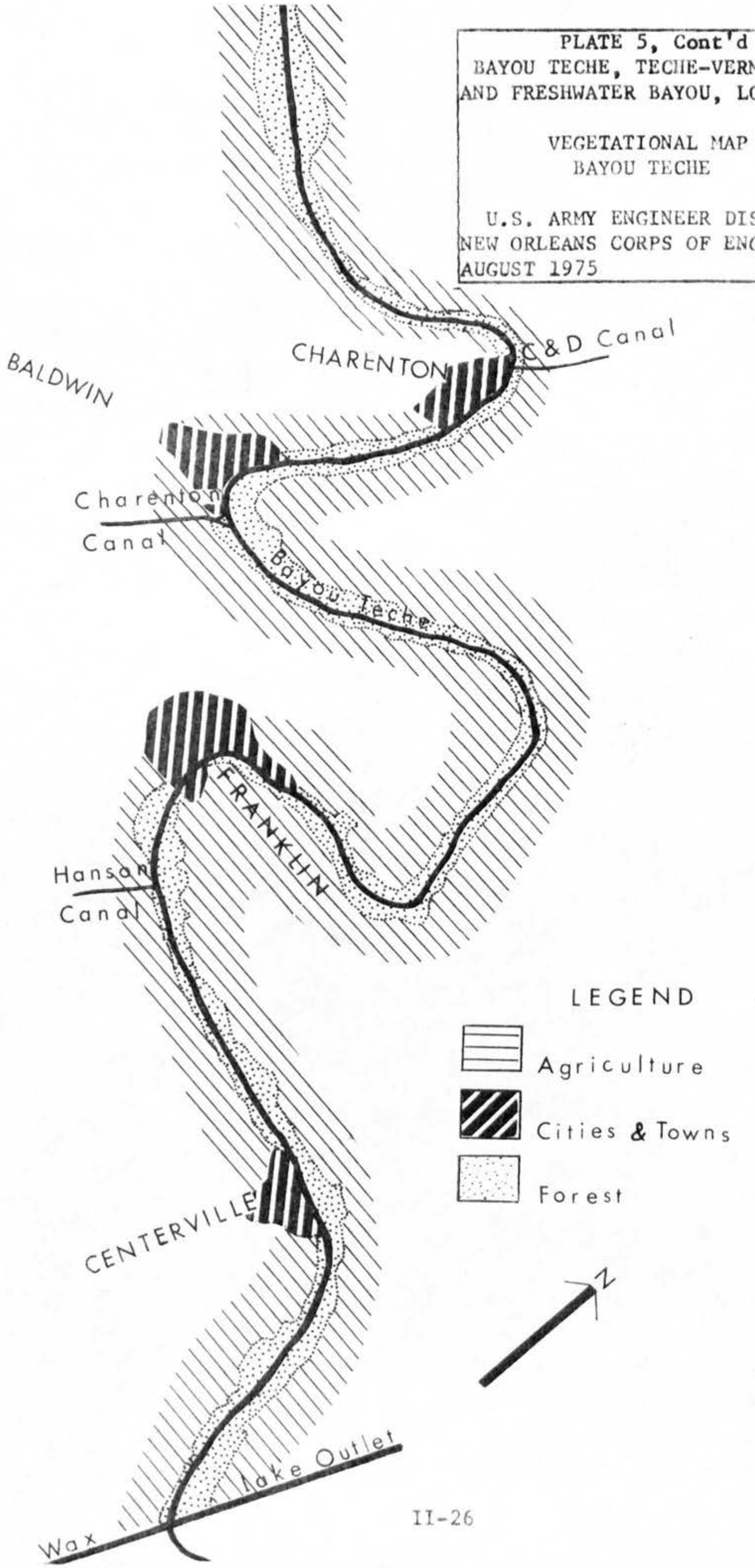

PLATE 6
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
VERMILION RIVER

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
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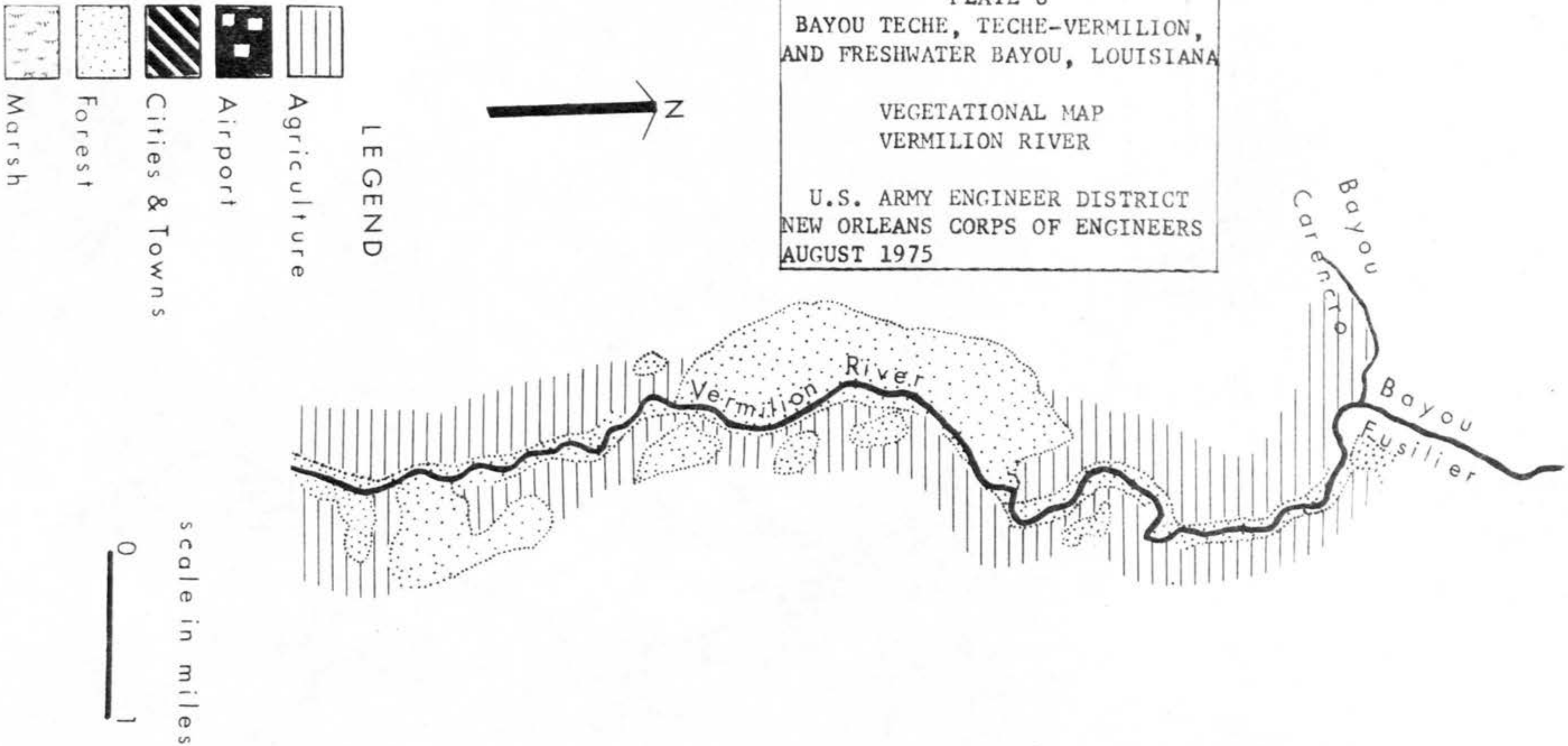
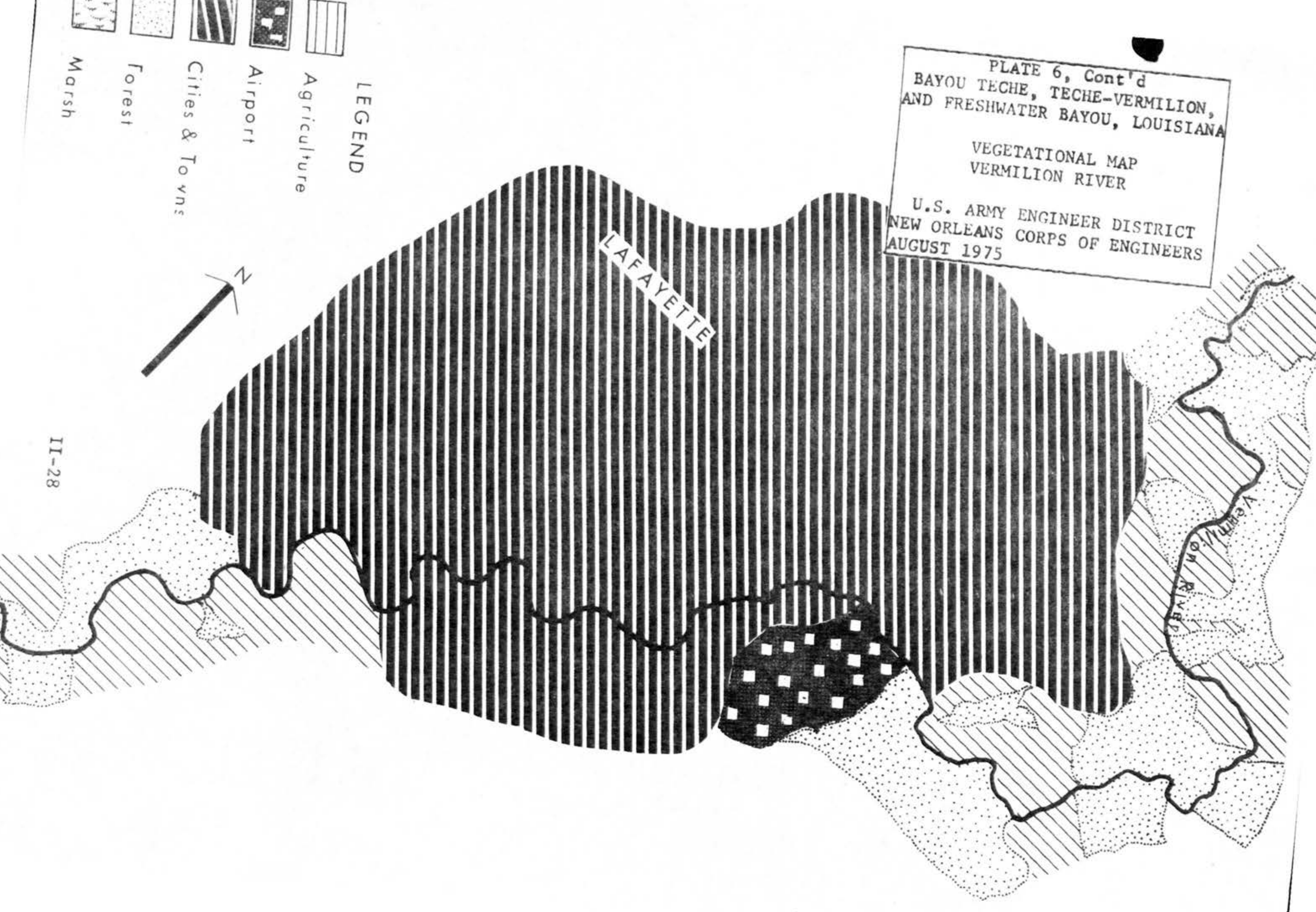


PLATE 6, Cont'd
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
VERMILION RIVER

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975



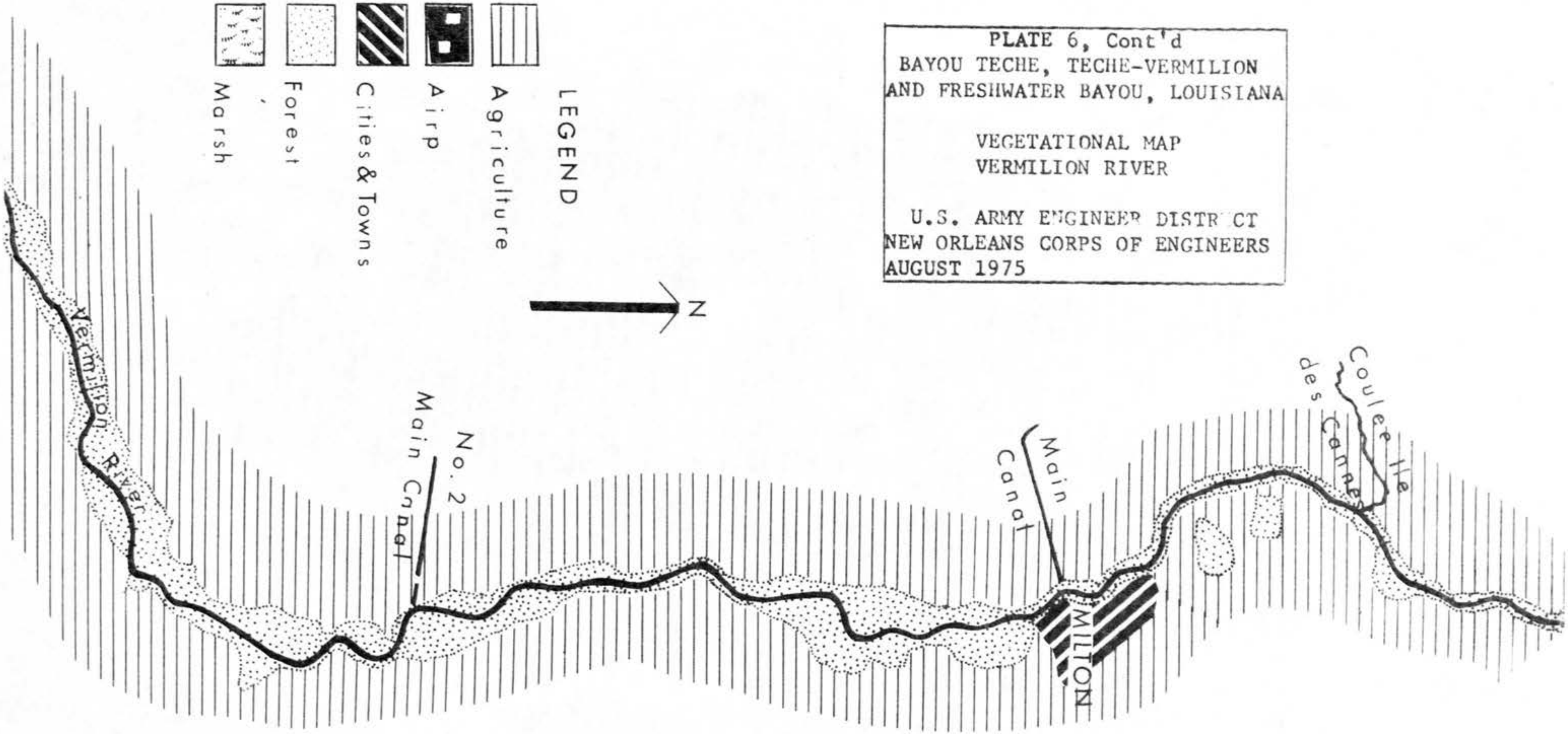


PLATE 6, Cont'd
BAYOU TECHE, TECHE-VERMILION
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
VERMILION RIVER

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

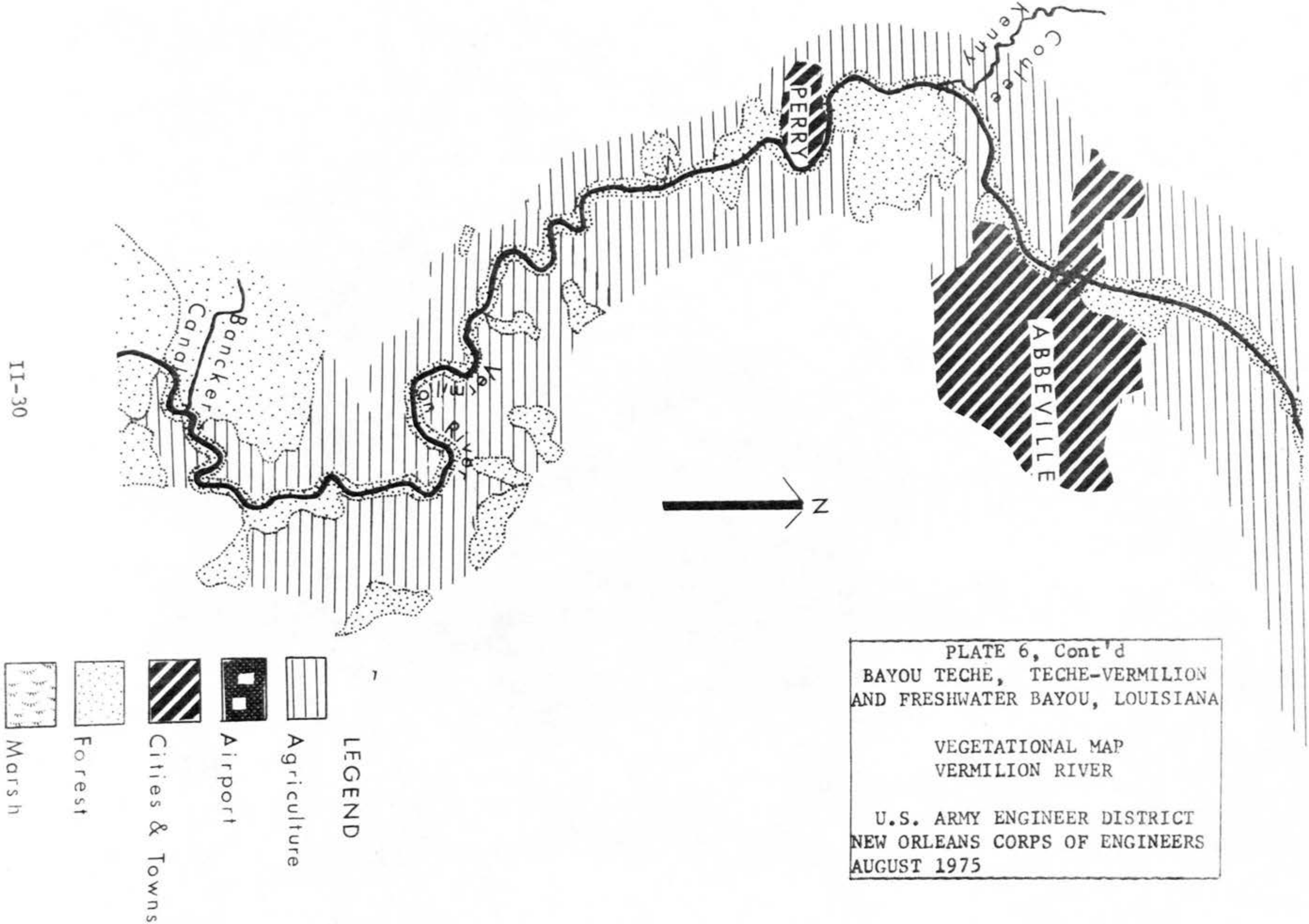


PLATE 6, Cont'd
BAYOU TECHE, TECHE-VERMILION
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
VERMILION RIVER

U.S. ARMY ENGINEER DISTRICT
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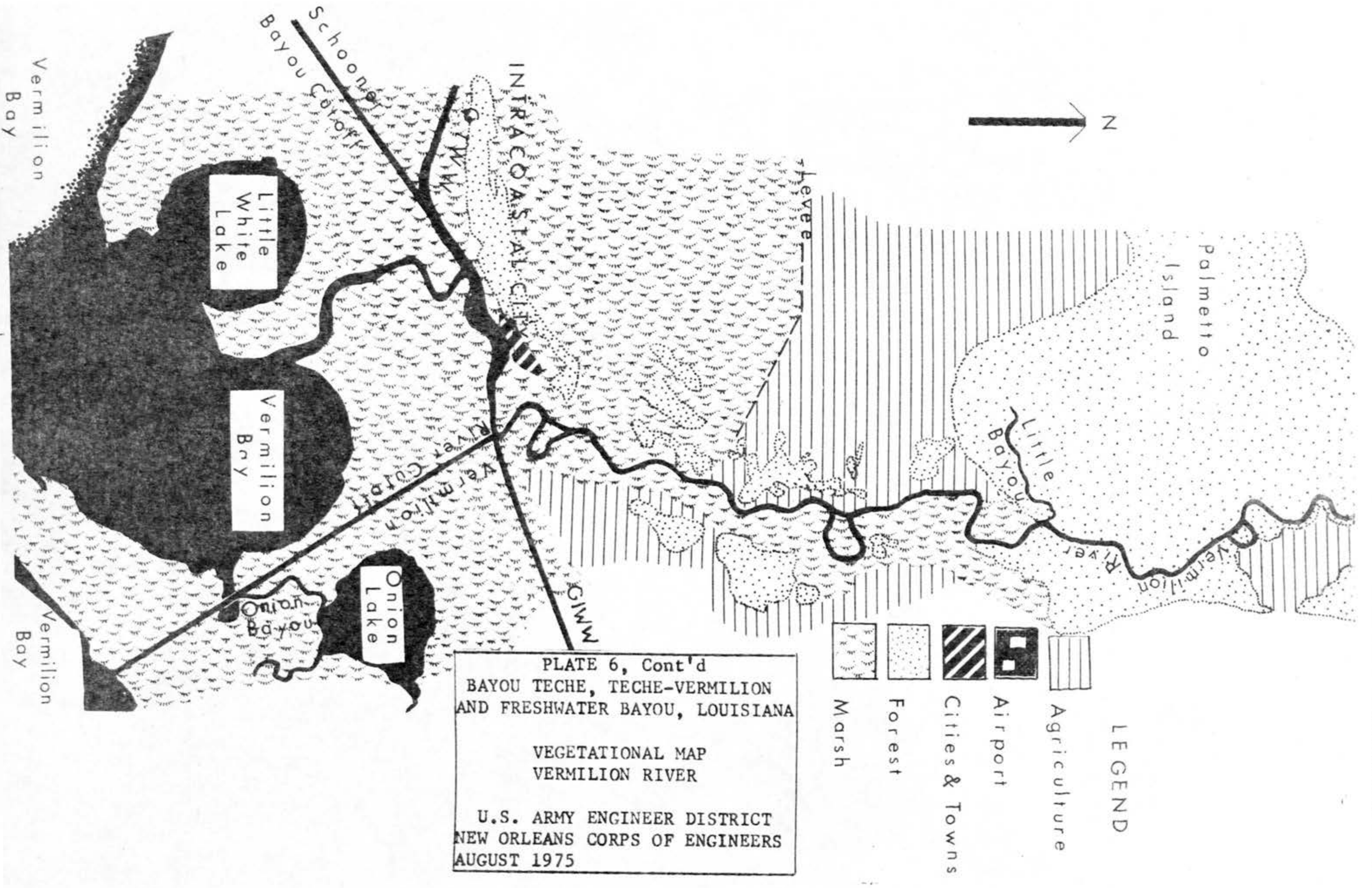


PLATE 6, Cont'd
BAYOU TECHE, TECHE-VERMILION
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
VERMILION RIVER

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

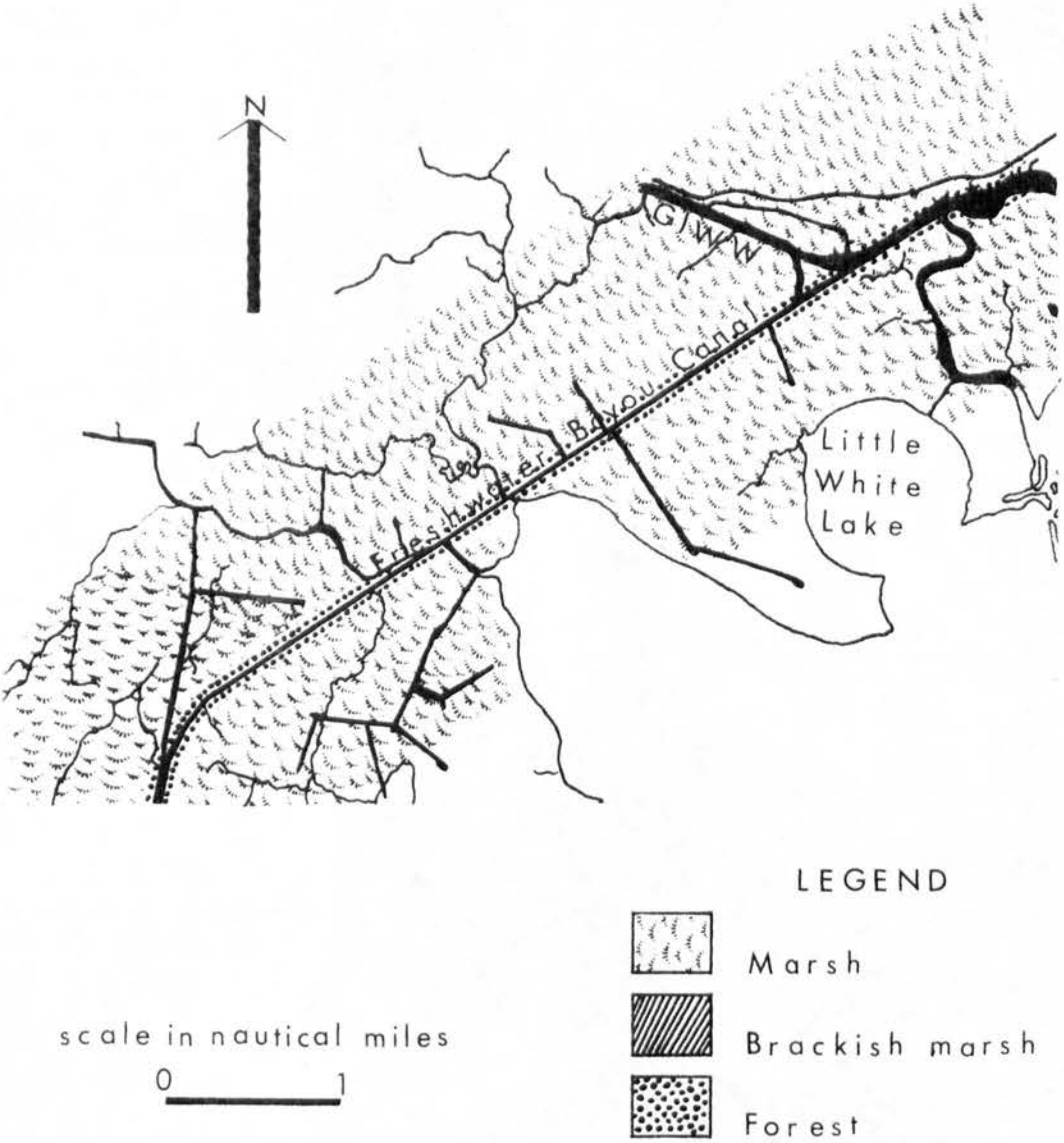


PLATE 7
BAYOU TECHE, TECHE-VERMILION
AND FRESHWATER BAYOU, LOUISIANA

VEGETATIONAL MAP
FRESHWATER BAYOU CANAL

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

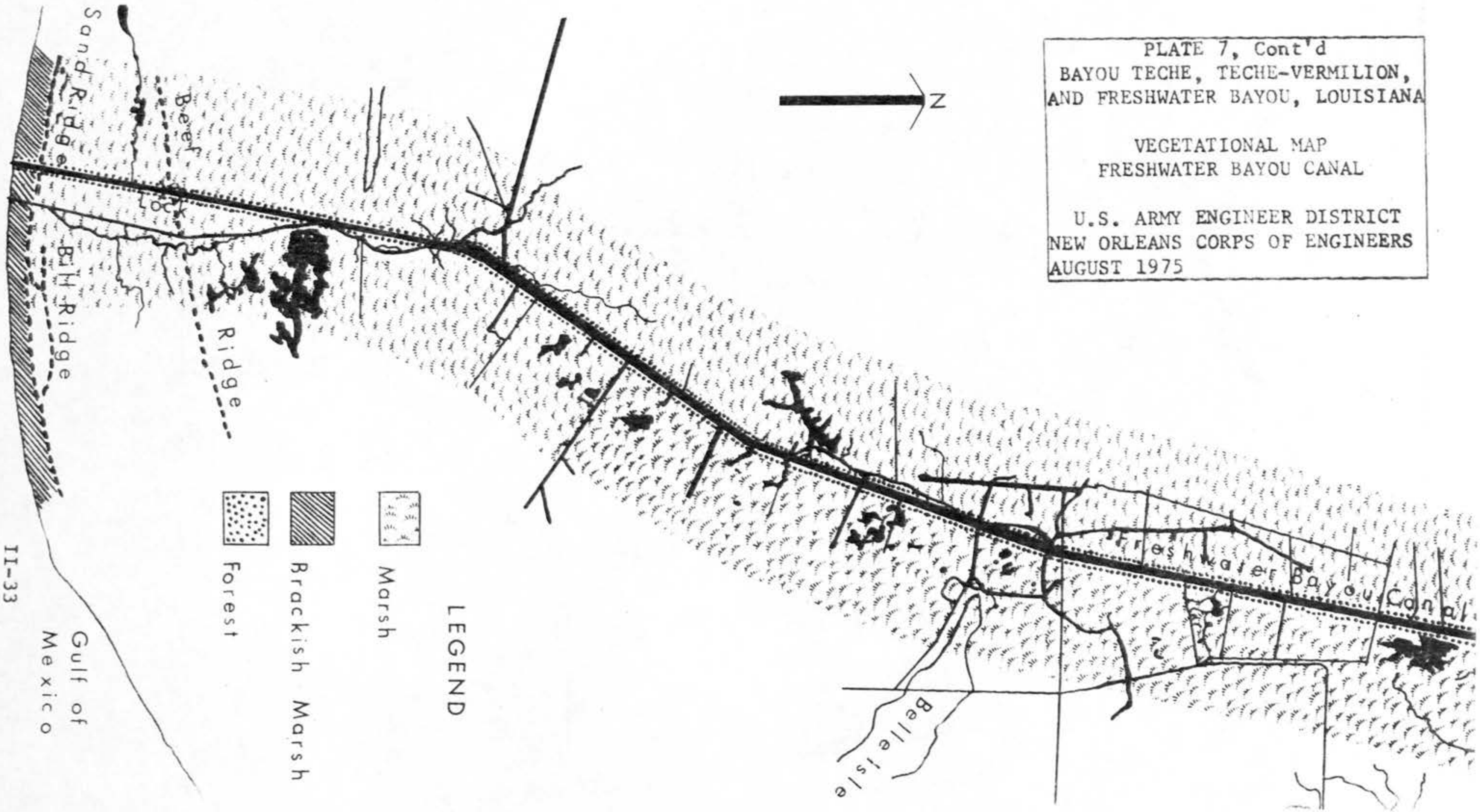


PLATE 7, Cont'd
BAYOU TECHE, TECHE-VERMILION, AND FRESHWATER BAYOU, LOUISIANA
VEGETATIONAL MAP
FRESHWATER BAYOU CANAL
U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975
N
Sand Ridge
Beef Ridge
Lock
Bill Ridge
Freshwater Bayou Canal
Belle Isle
Gulf of Mexico
LEGEND
Marsh
Brackish Marsh
Forest

Palmetto Island, between Abbeville and Intracoastal City on the Vermilion River, is a particularly good example of a wooded swamp. Its dominant trees include swamp redbay, pumpkin ash, black willow, bald cypress, Drummonds red maple, overcup oak, persimmon, and obtusa oak. The understory includes palmetto, buttonbush, deciduous holly, wax myrtle, and greenbriars. Herbaceous plants on the forest floor include eastern lilaeopsis, water pimpernel, umbrella pennywort, coast rose-gentian, Pennsylvania bittercress, lizard's tail, butterweed, elephant's ear, alligatorweed, hygrophila, and water hyssop, with many others. Dominant trees of the hardwood bottoms in general include tupelo gum, bald cypress, Drummond red maple, black willow, overcup oak, obtusa oak, ashes, roughleaf dogwood, Chinese tallow tree, swamp redbay, water hickory, persimmon, water elm, honey locust, water locust, and winged elm. Plants of the understory of the hardwood bottoms include shrubs and vines such as greenbriars, wax myrtle, rattle-box, buttonbush, swamp-privet, palmetto, peppervine, climbing hempweed, Virginia willow, and wisteria. Herbaceous plants of the hardwood bottoms are represented by species such as bitterweed, vetch, dogfennel, ebony spleenwort, lizard's tail, umbrella pennywort, rushes, sedges, grasses, swamp smartweed, clearweed, sensitive fern, hygrophila, hydrolea, zigzag-stemmed iris, elephant's ear, water hyssop, water starwort, delta duck potato, marsh-purslane, Virginia hedgehyssop, and others. Spanish moss is conspicuous as an epiphyte in hardwood bottoms. Bryophytes are well-represented in hardwood bottoms by both mosses and liverworts. The liverwort, Porella platyphylla, conspicuous on tree bases and bald cypress knees, is an indicator plant for such habitats. Other liverworts present in the hardwood bottoms include frullanias, Riccia fluitans, Leptocolea cardiocarpa, and Plagiochila. Mosses present and typical include Amblystegium, Thuidium, Climacium americanum, Taxiphyllum alternans, Leskea australis, Anomodon attenuatus, Forsstroemia trichomitria, and Cryphaea glomerata.

c. Uplands. True uplands dominated by hardwood forest occur in the project area only along the portion of the Vermilion River between Lafayette and Abbeville. Here the Vermilion River occupies a valley cut through the high Prairie Terrace (Holland, 1944), and the banks and adjacent well-drained lands bear a rich and diverse upland hardwood forest similar to that found further to the north (Reese and Thieret, 1966). Other upland hardwood forest areas occur to a very limited extent along the Vermilion River north of Lafayette and along Bayou Teche north of Franklin, where bank elevation permits sufficient drainage for the forest to develop and persist. These forested areas occupy very narrow strips along the stream banks on the natural levees. Such forest also is developing on old banks of dredged material, particularly along the upper portions of the Vermilion

River, north of Lafayette. The uplands are dominated by trees such as basswood, hackberry, sweetgum, American elm, pawpaw, blackgum, hickories, cow oak, water oak, live oak, pecan, and cherrybark oak. Shrubs and vines include deciduous holly, gum bumelia, osage orange, hop wafer, American beautyberry, trumpet creeper, elderberry, rattan vine, peppervine, red berried moonseed, Japanese honeysuckle, greenbriar, spice bush, Virginia creeper, southern buckeye, poison ivy, tree huckleberry, and blackberries. Forest floor herbs of the upland hardwood forest include species such as wild geranium, jack-in-the-pulpit, may apple, ebony spleenwort, southern shield fern, Japanese climbing fern, false garlic, day flower, lyre-leaf sage, leather flower, and wood sorrel. Mosses prominent in this forest include Thuidium delicatulum, Mnium affine, Leucodon julaceous, Fissidens taxifolius, Ditrichum pallidum, Cirriphyllum illecebrum, and Clasmatodon parvulus. Wooded areas along the Vermilion and Teche provide habitats for numerous species of fungi. (The open areas generally lack the organic matter necessary to support fungi except in old grazed areas.) The Basicidmycetes are well represented by resupinate and bracket types on dead wood, where they are important organisms of decay, and occasionally on living trees where they are parasites. Mushrooms, puff-balls, earth-stars, and stinkhorns are less common but may be found at different seasons of the year when conditions are favorable. Although seldom in any abundance, a large number of species of jellyfungi can be found. Ascomycetes, less conspicuous because of their generally small size, are almost always present. A number of apothecium-producing ascomycetes are common on cattle dung in the grazed areas, and numerous plant pathogens of this group (and of Basidiomycetes, as well) are to be found in the project area. The very small water molds are present in the streams, tributaries, and small overflow ponds along and behind the banks. The Zygomycetes, also microscopic, or nearly so, are present but inconspicuous. A large number of species of the minute slime molds are found throughout the year on wet, decaying vegetation and wood. A list of fungi which could occur in the project area is in the appendix. Lichens are also most common in the wooded areas along the Vermilion and Teche, and are rare in the lower, marshy areas of both streams and along Freshwater Bayou. Species of crustose and foliose lichens are more common than are those of the foliose type. The lichens are found almost entirely on wood, terrestrial forms being seldom seen.

d. Marshes. Marshes in the project area are predominately intermediate and brackish in the lower reaches of the Vermilion River and Freshwater Bayou (Chabreck, 1972). A narrow coastal strip is indicated by Chabreck (1972) to be saline south of the Freshwater Bayou lock. The intermediate marshes are wet most of the year and are dominated by grasses including common reed

and switch grass, and sedges including three-cornered grass and spikerushes, and other herbaceous plants such as bulltongue, saltmarsh mallow, and eastern lilaeopsis. In the intermediate marshes, dredged material banks, cheniers, and natural levees bear a relatively diverse vegetation including tallow tree, China-berry, eastern baccharis, pokeweed, maypops, buttonweed, vetch, seaside goldenrod, chickweed, canary grass, Venus looking-glass, Bermuda grass, and butterweed. On the Vermilion River, freshwater marsh extends from approximately 3 miles south of Abbeville almost to Vermilion Bay, where it becomes intermediate then brackish. Virtually all of Freshwater Bayou (including Schooner Bayou Cutoff, Six Mile Canal, and Belle Isle Canal) runs through intermediate marsh, although brackish conditions may prevail from time to time along the upper portions of Vermilion Bay. Freshwater Bayou Canal passes through brackish marsh, then finally south of the lock it passes through a narrow strip of saline marsh (Chabreck, 1972). There are no well-defined marshes along Bayou Teche. Lowland areas beyond the natural levees of the Teche are cultivated or occupied by wooded swamp (discussed under 2.04b). The lower regions of the Vermilion and Teche, and the banks of Freshwater Bayou support a limited flora of fungi, a few polypores and agarics being the only ones seen. Very few macroscopic fungi occur in the salt marshes near the Gulf.

e. Economic (commercial uses of b, c, d). Forested portions of the project area, including Hardwood Bottoms and Uplands, are fairly important as a source of lumber (Table 4). There are only minor other economic uses of forested areas, such as commercial fisheries in the swamp forest, and leasing of certain areas for sport hunting. Economic uses of marshes in the project area include cattle grazing, commercial fisheries, trapping of furbearers, and leasing for sport hunting.

f. Recreational uses of b, c, d (including esthetical). Predominant recreational activities include: hunting and trapping in upland forests, bottomlands, and marshes; fishing in woodland sloughs and swamps and in marsh ponds and creeks; and boating activities, nature photography, and bird watching throughout the general project area. The esthetic value of the area is enhanced by the presence of magnificent live oaks and cypress trees which shroud the landscape and shade the water courses. Two kinds of edible mushrooms (the oyster mushroom and the chanterelle)occur in sufficient abundance for gathering.

g. Wildlife uses of b, c, d. The hardwood bottomlands and tree-covered uplands are important habitats for many species of birds, furnishing them nesting sites, nesting materials, cover, and food. Many birds nest in the tree canopy or in the understories. Natural cavities as well as dead limbs provide sites for hole nesting species. A few birds use Spanish moss

TABLE 4

SAWTIMBER HARVESTED IN PROJECT AREA IN 1971.

REPORTED IN BOARD FEET (DOYLE SCALE). (DATA

FROM ENGINEER AGENCY FOR RESOURCES INVENTORY, 1973)

	Iberia	Lafayette	St. Martin	St. Mary	Vermilion
Ash			666,000		519
Gum	354,000	199,000	617,000	434,000	132,000
Oak		203	141,000	132,000	20,000
Pine				212,000*	334
Cypress		45,000	148,000		117,000
Cottonwood and Willow			1,300,000		2,000
Other Hardwood			276,000	29,000	2,000
Total	354,000	244,203	3,148,000	807,000	273,853

* Probably an error for cypress. Pine occurs in St. Mary Parish only as ornamental plantings.

as nesting sites while others use it as building material. The fruits and seeds of such trees as oaks, hackberry, sweet-gum, sycamore, maples, elms, Chinese tallow, hickories, Chinaberry, mulberry, and wild cherry are important foods for a wide variety of birds. Vines such as poison ivy, honeysuckle, rattan, muscadine, blackberry, greenbrier, and Virginia creeper also furnish fruit relished by many birds. Shrubs producing important fruits for birds include elderberry, French mulberry, dogwoods, yaupon and deciduous hollies, hawthorns, and McCartney and Cherokee roses. The seeds of the many species of grasses, sedges, and other herbaceous plants furnish the major diet for a wide variety of birds. In the marsh areas most of the birds nest on the ground or in the emerging vegetation. However, the embankments of dredged material with their shrubs and small trees furnish elevated sites for other species of birds. The marsh grasses provide most of the nest construction material for marsh nesting birds as well as providing some food mainly in the form of seeds. Waterfowl feed not only on seeds but the leaves, stems, rhizomes, and tubers of various marsh plants such as pondweeds, duckweeds, delta duck potato, and sedges. Important furbearing animals such as otter, mink, nutria, and raccoon are found in bottomland hardwood forests and tupelo cypress swamps of the Teche Bayou and Vermilion River. These communities also provide both habitat and food for the white-tailed deer, gray squirrel, and swamp rabbit. Upland forests provide shelter and food for fox squirrels, flying squirrels, opossums, skunks, and a variety of rats and mice. Canopies of upland and lowland trees and shrubs provide nesting sites for birds, and hollows in trunks provide homes for several species of birds and squirrels. Holes under roots are used as burrows by small mammals. Vast stretches of marshland in the southern portion of the project area support a variety of mammalian species. Muskrats (O'Neil, 1949) thrive on three-corner grass and cattail while nutria feed on both aquatic and semiaquatic vegetation. Marsh plant species provide construction material for nests for construction of houses. In addition the marsh supports varied populations of alligators, white-tailed deer, otter, mink, and swamp rabbits.

h. Rare or endangered species. The only area endangered and threatened plant species occurring in the study is a broomsedge, (*Bothriochloa exaristata*. (In Report on Endangered and Threatened Plant Species of the United States, 1975).

i. Phytoplankton. The major components of the phytoplankton of the Vermilion River are the blue-green algae, diatoms, green flagellates, and euglenoids (see Table 5). Although the blue-green algae are well represented at each sample site, the abundance and diversity of these organisms is greatest in the northern portion of the river. Common blue-green algae are *Merismopedia*,

TABLE 5

MOST FREQUENT ALGAL GENERA OF BAYOU TECHE,

VERMILION RIVER, AND FRESHWATER BAYOU

Station number (in miles)	Most frequent genus of phytoplankton	Other common genera of phytoplankton
	Bayou Teche	
113.5	Melosira	Navicula, Pinnularia
106.0	Navicula	Terpsinoe, Melosira, Nitzschia
88.0	Navicula	Terpsinoe, Nitzschia
72.0	Spirulina	Fragillaria, Terpsinoe, Melosira
44.0	Ceratium	Spirulina
28.0	Melosira	Cyclotella, Nitzschia, Pleurosigma, Surirella
15.0	Melosira	Oscillatoria
0.0	Euglena	Melosira, Trachelomonas
	Vermilion River	
73.0	Synedra	Oscillatoria, Terpsinoe, Nitzschia
53.5	Nitzschia, Synedra	Melosira, Ceratium, Volvox Euglena
37.0	Ceratium	Melosira, Nitzschia, Volvox
26.0	Anabaena	Melosira
5.0	Ceratium	Terpsinoe, Synedra
	Freshwater Bayou	
19.0	Cocinodiscus	Nitzschia, Pinnularia, Biddulphia

TABLE 5 (Cont'd)

14.5	Nitzschia	Coscinodiscus, Stephanodiscus
8.0	Coscinodiscus	Nitzschia, Pinnularia
2.5	Coscinodiscus	Nitzschia
0.0	Coscinodiscus	Nitzschia, Amphora
		Ditylum, Rhizosolenia

Aphanizomenon, Anabaena, Lyngbya, Oscillatoria, and Nodularia. Many of the Cyanophyta are characterized by gelatinous sheaths and are thus aggregated with debris and other organisms. The diatom genera of the river are those common to a freshwater river ecosystem in the lower Mississippi drainage system (Weber, 1971). The genera Melosira, Fragillaria, and Nitzschia which form chains or filaments of cells are a common component of the phytoplankton. The common unicellular diatoms are Cyclotella, Terpsinoe, Nitzschia, Pleurosigma, Pinnularia, Surirella, and Synedra. The composition of the diatom flora is slightly modified by salinity at the mouth of the Vermilion. Along with the change in species composition, an increase in the number of centric diatoms (Cyclotella, Melosira, and Coscinodiscus) is observed in brackish water. Except for those attached organisms that often break loose as a result of wave action, few green algae are found in the plankton. The phytoflagellates, Volvox, Eudorina, and Ceratium are common in the upper portion of the river. There are many species of attached algae on the moist banks of the river which are exposed to wave action. The common attached algae are: Ulothrix, Pithophora, Vaucheria, Sirogonium,and many species of diatoms. The diatoms, blue-greem algae, and the euglenoid flagellates are the most abundant algal group in the phytoplankton of Bayou Teche (see Table 5). The common diatom genera are: Melosira, Cyclotella, Coscinodiscus, Terpsinoe, Navicula, Cyclotella, Nitzschia, Pleurosigma, Surirella, and Synedra. Chains of Melosira cells are especially abundant in the southern portion of the river. Nitzschia, Pleurosigma, and Surirella are common in the southern portion while Terpsinoe, Navicula, and Nitzschia are common in the northern portion of the Teche. Several genera of blue-green algae, Oscillatoria, Spirulina, and Anabaena, are common at each sampled site of Bayou Teche. Gomphosphaeria, Lyngbya, and Merismopedia are sporadically found in the plankton. Euglena, Trachelomonas, and the dinoflagellate, Ceratium hirundinella are the common phytoflagellates of the river plankton. Several species of Euglena and Ceratium hirundinella are abundant in the southern portion of the Teche. In this river the abundance and diversity of green algae are low. The exposed soil banks of the river, kept moist by wave action, are excellent habitats for a diverse assemblage of attached algae. The diatoms are the major component of the phytoplankton of Freshwater Bayou (see Table 5). Green algae, euglenoids and blue-green algae are uncommon in the plankton. Many species of green algae and blue-green algae form assemblages of attached forms on the exposed soil banks of the bayou. The species composition of the diatom flora changes with salinity of the water. Amphora, Ditylum, Rhizosolenia, and Gyrosigma are common in the more brackish water near the mouth of the bayou. Fragillaria, Surirella, Eunotia, Cymbella, and Frustula are common to the least brackish segments of the bayou. Coscino-

discus and Nitzschia are however abundant in the plankton of all the sampled sites.

2.05 ZOOLOGICAL ELEMENTS

a. General wildlife description. Habitats in the project area include flood plain swamps, bottomland hardwoods, upland forests, fresh and brackish water marshes, grazed pastures, and secondary growth forests of the categories mentioned. This diversity of habitats determines to a large extent the number and kinds of animals occurring in the study area. These animals are listed in Appendix B.

(1) Game and fur mammals. Important game mammals in the project area include the white-tailed deer, fox squirrel, gray squirrel, cottontail rabbit, and swamp rabbit. Commercially important furbearing species include the otter, nutria, muskrat, mink, and raccoon. Other furbearers of less importance are the opossum, red fox, gray fox, and bobcat.

(2) Non-game mammals. A rich diversity of nongame mammals occurs in the area. Of special importance are such species as the white-footed mouse, cotton mouse, hispid cotton rat, and the marsh rice rat, which are integral links in terrestrial food chains. One important predator species, the coyote, is increasing in numbers in the project area. In Iberia Parish several individual packs have been located (personal communication, May 1975, Mr. Larry Dugas, Wildlife Biologist, New Iberia). Other nongame species include the flying squirrel, armadillo, wood rat, Norway rat, roof rat, house mouse, short-tail shrew and least shrew.

(3) Game birds.

(a) Resident. Game birds that are permanent residents in the marshes are the clapper and king rails, and the common gallinule. The bobwhite is a permanent resident in open fields and disturbed areas.

(b) Migratory. Migratory waterfowl that are largely winter residents in the adjacent marshes and bay areas include the snow goose (blue and white phases) and various ducks such as mallard, gadwall, northern pintail, green-winged and blue-winged teals, American wigeon, northern shoveler, ring-necked duck and lesser scaup. The fulvous tree duck nests in adjacent rice fields. In addition, the mottled duck, wood duck, and mourning dove, which are classified as migratory species by the U.S. Fish and Wildlife Service, have established resident populations in the state. The mottled duck is most adundant in

the marshes and rice fields, while the wood duck prefers woodland swamps and lakes. The mourning dove is primarily a resident of open fields and disturbed areas. Other migratory game birds present are the American woodcock, Virginia rail, sora, purple gallinule, American coot and common snipe. With the exception of gallinules and a few American coots which are largely summer residents, the remainder of these migratory species are winter residents in the state. In addition, a few white-winged doves winter in the area.

(4) Nongame birds.

(a) Resident. Many more species of nongame than game birds occur in the project area. In the bays and marshes adjacent to the waterways some permanent residents are the pied-billed grebe, great blue and Louisiana herons, black-crowned and yellow-crowned night herons, great and snowy egrets, white-faced and white ibises, Wilson plover, killdeer, willet, sanderling, laughing gull, gull-billed, Forster's, royal and Caspian terns, black skimmer and belted kingfisher. The main song birds are the long-billed marsh wren, common yellowthroat, red-winged blackbird, boat-tailed grackle and seaside sparrow. The disturbed and wooded areas are the permanent homes for various species of hawks, vultures, owls, woodpeckers, cattle egret, blue jay, fish and common crows, Carolina chickadee, tufted titmouse, Carolina wren, brown thrasher, northern mockingbird, blue-gray gnatcatcher, loggerhead shrike, European starling, common yellowthroat, common grackle, brown-headed cowbird, house sparrow and cardinal.

(b) Migratory. There are many nongame birds that migrate through the project area on their way north or south and there are others that are either winter or summer residents only. Examples of winter residents in the marshes and bay areas would be the common loon, American white pelican, double-crested cormorant, American bittern, marsh hawk, black-bellied plover, numerous species of shorebirds, herring, ring-billed and Bonaparte's gulls, tree swallow, water pipit, and swamp sparrow. Migratory nesting birds consist of the little blue heron, least bittern, osprey, black-necked stilt, common nighthawk, eastern kingbird, and orchard oriole. Among the winter residents found in the wooded and disturbed upland areas are the red-tailed hawk, American kestrel, yellow bellied sapsucker, eastern phoebe, house and winter wrens, American robin, hermit thrush, ruby-crowned and golden-crowned kinglets, cedar waxwing, solitary vireo, several warblers, rusty blackbird, purple finch, American goldfinch and several species of sparrows. Woodland and upland nesting birds would include the green heron, Mississippi kite, broad-winged hawk, yellow-billed cuckoo, chimney swift, ruby-

throated hummingbird, several flycatchers, purple martin, wood thrush, several vireos, warblers and orioles, summer tanager, and indigo and painted buntings. Spring and fall migrants through the project area would include various shorebirds, flycatchers, swallows, thrushes, vireos, warblers, grosbeaks, gray catbirds, and scarlet tanagers.

(5) Approximately 83 species of reptiles and amphibians occur in the project area (Keiser and Wilson, 1969). Most of these are rather common in occurrence and can be encountered in the project area with some consistency. The more common amphibians to be found within the area include the lesser siren, three-toed amphiuma, marbled salamander, newt, Fowler's and Gulf Coast toads, cricket frog, spring peeper, gray and green treefrogs, chorus frog, eastern narrow-mouthed toad, bullfrog, pig frog, bronze frog, and leopard frog. Common reptiles encountered in the area include the American alligator, alligator snapping turtle, common snapping turtle, stinkpot, razor-backed musk turtle, mud turtle, three-toed box turtle, Mississippi map turtle, painted turtle, red-eared slider, cooter, and the spiny softshell turtle. In the more drier habitats are found several species of lizards including the green anole, ground skink, five-lived skink, broad-headed skink, and glass lizard. Common snakes include the broad-banded and diamond-backed water snakes, yellow-bellied water snake, Graham's and glossy water snakes, brown snake, eastern ribbon snake, rough earth snake, eastern hognose, mud snake, racers, rough green snake, rat snakes, king snakes, copperhead, and the cottonmouth. Some reptiles and amphibians are known to be rare or uncommon in the project area, either because the animal is at the edge of the species geographical range where optimum habitat is not available, or because they are uncommon by nature. Some rare or uncommon species within the area of the project are the waterdog, mole salamander, spotted salamander, dusky and dwarf salamanders, eastern spadefoot toad, ornate box turtle, diamondback terrapin, false map turtle, chicken turtle, fence lizard, six-lined racerunner, red-bellied snake, garter snake, smooth earth snake, ringneck snake, coachwhip, corn snake, milk snake, scarlet snake, coral snake, and pigmy and canebrake rattlesnakes. The northern, drier portion of the project area, such as the upper stretches of Bayou Teche and the Vermilion River, harbor most of the species encountered in the project area. Reptiles and amphibians which are commonly found in the higher elevations include most of the terrestrial salamanders (marbled, spotted, small-mouthed), toads, tree frogs, box turtles, green anoles, skinks, earth snakes, hognose snakes, racers, rat and king snakes, and copperheads.

(6) Insects. The major order of insects in the project area with species that are dependent upon water for

their development are Ephemeroptera, Odonata, Hemiptera, Megaloptera, Coleoptera, Trichoptera and Diptera. Members of all of these orders except Megaloptera were present in the samples taken during the study. All of these orders are probably of some significance in the food chains of the aquatic environments, but only the order Diptera contains any species which directly affect man. Two families with aquatic larvae in the order Diptera contain species which bite man. These are the family Culicidae (the mosquitoes) and the family Ceratopogonidae (the biting midges). The blood-sucking habits and potential as vectors of diseases of man and domestic animals make them of considerable importance. The larvae of these two families are normally associated with lentic ecosystems, but larvae of both families were taken in samples from the streams in the study. In general any activity which will increase stream flow and/or reduce the accumulation of organic matter in the streams will reduce the populations of these two families.

(7) <u>Sport, commercial and esthetic uses of wildlife species in the project area.</u> Wildlife resources in the project area afford excellent sport, commercial and esthetic uses to residents and to visitors to Louisiana. Table lists annual receipts for trapping seasons in Louisiana from 1960 to 1973. Fur trapping in the region is a multimillion dollar business. Nutria and muskrat comprise about 85 percent of the total harvest (Louisiana Advisory Commission on Coastal and Marine Resources, 1973). Small game species such as squirrels and rabbits abound in forested habitats. White-tailed deer, common throughout the project area, are especially abundant in the marsh. The lower reaches of the Vermilion River, Teche Bayou and Freshwater Bayou intersect vast expanses of lowlands and marsh which offer a feeling of serenity and freedom to the naturalist. Bird watching and nature photography are important avocations for many people of the area.

(8) <u>Public hunting areas.</u> There are no public hunting areas in the project area. However, plans are being made to establish the Attakapas Island Outdoor Recreation Area within the Atchafalaya Basin adjacent to the eastern boundary of the project area. The plans and developments for this recreation area are currently being initiated by the Atchafalaya Basin Division of Louisiana Department of Public Works. Ultimately, this 23,000 acre recreation area is to be administered by the Louisiana Wild Life and Fisheries Commission. Also, intensive hunting efforts for waterfowl and whitetail deer are expended in and adjacent to the southern portions of the study area by private individuals and members of hunting clubs which own or lease substantial tracts of land.

ANNUAL RECEIPTS FROM FUR ANIMALS TRAPPED
IN LOUISIANA FROM 1960 - 1973

Trapping Season	Annual Receipt
1960-61	$2,164,207.90
1961-62	$2,428,267.00
1962-63	$3,216,247.70
1963-64	$2,641,594.25
1964-65	$3,172,037.00
1965-66	$4,614,371.10
1966-67	$3,648,011.70
1967-68	$2,858,324.40
1968-69	$6,063,514.40
1969-70	$5,956,700.25
1970-71	$4,512,968,50
1971-72	$5,969,398.50
1972-73	$9,628,831.00
Total	$56,883.473.70

Source: Lowery, George, H., Jr., 1974.

(9) Endangered and threatened species. In accord with the Endangered Species Act of 1973, the former lists of native and foreign endangered species have been combined by the United States Department of Interior, Office of Endangered Species, to comprise a new Endangered Species list. Table 33, Code of Federal Regulations, Chapter II, Part 209.145 relative to disposal of dredged material in navigable or ocean waters specifies that: "The Endangered Species Act of 1973 (16 U.S.C. 66aa-668cc-6, P.L. 93-205, 87 Stat. 884) requires Federal agencies in the administration of their respective programs to provide for conservation of endangered species and to insure that these programs will not jeopardize the continued existence of species which have been identified by the Secretary of Interior as endangered or threatened, or result in the destruction or modification of the habitat of such species." Seven species listed in tables in Appendix B are included on the May, 1974, United States list of endangered fauna. Discussion of each species follows. The present known range of the red wolf in the U.S. lies within the coastal prairie and coastal marsh areas. Within Louisiana evidence indicates that small numbers are still present in Cameron and Vermilion Parishes (Riley and McBride, 1972; Lowery, 1974). The brown pelican which became extirpated in Louisiana during the 1960's once inhabited the whole coastal area of Louisiana including that in the project area. Several reintroductions failed except for some birds from Florida released in the Barataria Bay area. It is thought that pesticides were the main cause for the original decline as well as for the failure of the reintroductions on the Rockerfeller Refuge. Although the Barataria Bay pelicans have nested successfully for several years, die-offs from endrin intoxication occurred in this population during the spring and summer of 1975 (personal communication, July 25, 1975, Mr. Ralph Latapie, Director, Grand Terre Research Laboratory, Louisiana Wild Life and Fisheries Commission). The southern bald eagle may occur rarely in the project area as it is known to nest in small numbers in the coastal parishes to the east (Terrebonne and Jefferson) and at one site to the west in Cameron Parish. Human disturbances including shooting, cutting of nesting trees, increased recreational activities and chlorinated hydrocarbons in agriculture and mosquito control probably have been the main causes of the decline in this eagle. The Arctic peregrine falcon has been extirpated as a breeding bird in the eastern part of the U.S. probably largely by pesticides. It is reported occasionally during the winter along the Louisiana coast and probably does occur in the project area. The ivory-billed woodpecker, because of its rarity, has only a slight possibliity of occurring in the project area. It was reported at least twice in 1971 and even photographed in the region just east of the project area. Bachman's warbler once bred in the bottomland swamps of the South but now is so rare that nothing is known of its present

breeding range. Lowery (1974a) states that "breeding pairs probably occur here and there through many parts of Louisiana." There are a few heavily wooded swampy places in the project area where this species might occur. A rare but not endangered bird that occurs in the project area is the osprey. It has shown a rapid decline throughout the eastern United States largely due to chlorinated hydrocarbons. The American alligator, while still on the endangered species list, has become more numerous with protection and is considered to be abundant throughout much of the project area. In the 26 September, 1975 Federal Register, the Department of Interior reclassified the alligator as threatened instead of endangered in Cameron, Calcasieu, and Vermilion Parishes. A controlled hunt was held in these parishes in the fall of 1975.

b. General description of aquatic animals in area.

(1) & (2) Stream and lake fishes and zooplankton. There are no specific works on these stream animals for the areas studied. Some information can be gathered from studies of nearby areas including Dotson(1966) who studied plankton in two lakes of the lower Atchafalaya, Turnage (1963) who studied the fishes of an area lake, Hoffpauer (1963) who studied the fishes of the Mermentau Basin, and Lantz (1974) who studied some of the fishes of a lake in the nearby Atchafalaya Basin. Much information is forthcoming from the basin, but the area is slightly peripheral to the present study. Based on these studies and the observations made during our reconaissance of the area, the Teche and Vermilion can be described as having faunas typical of slow flowing, low oxygen streams in south Louisiana, characterized by such species as channel and blue catfish, gar, and freshwater drum. Concurrent hydrographic data are shown in Appendix D. Species of fish collected and the size frequencies (by percent) are shown in Appendix C. No doubt, many were missed, especially those smaller types living close to the shore. Based on available collections this includes such species as mosquito fish (Gambusia affinis) and golden top minnows (Fundulus chrysotus). The zooplankton was similarly dominated by such forms as copepods and rotifers but in the Vermilion River only cladocerans were very common (Appendix B). Insects were relatively rare, except in a few spots, mainly in the Vermilion River. Samples made during the present study were taken during the day and therefore did not include common forms such as mysids which are known to be common near the coast in night plankton tows.

(3) Estuarine fishes and zooplankton. Estuarine influence occurs completely over Freshwater Bayou, which is dominated by salt water fishes, and the lower ends of Bayou Teche and the Vermilion River. The extent of estuarine influence no

doubt varies seasonally and even in the wet season it extends in the Vermilion River as far as Abbeville, Louisiana, according to our data taken in May, 1975. This invasion is probably greater in late summer when river flow is low and bay salinities higher. Estuarine influence in the Teche extended from above Baldwin to Calumet, probably because the Calumet locks closed during sampling prevent Atchafalaya water from entering. The most common estuarine fishes collected by trawl were Atlantic croakers, hogchokers, and sea catfish, but many more species are known to be in the area. Great detail on the fishes of the Vermilion Bay area has been presented by Morton (1973), Dugas (1970), Perret (1965), Norden (1966), and in several other smaller papers. However, Freshwater Bayou is located somewhat more landward than Vermilion Bay, except near the Gulf at the Freshwater Bayou lock, and has lower salinities than the bay. Near the Gulf, however, especially south of the locks there is considerable salt water influence which during times of low flow may allow salinities up above 20 ppt. Therefore, most any species found on the inner continental shelf might move temporarily into the lower end of Freshwater Bayou, just as any species of estuarine fish might move into the lower ends of the rivers. These short term movements are in to the area that most needs to be dredged, because the mouth of Freshwater Bayou is in a high deposition area. The zooplankton samples were dominated by copepods, rotifers, and fish larvae, mainly menhaden and anchovies.

(4) Crustacea and Mollusca. The freshwater mollusks and crustaceans of the area are poorly known. Ortego (1972) sampled bottom fauna in the Vermilion River and found the introduced Asiatic clam to be the most common mollusk. We found this clam not only to be the most common mollusk in the Vermilion River but also Bayou Teche. A few other species are known from the area but are nowhere common (Appendix C). There seems to be no large populations of snails, possibly due to the lack of submerged vegetation. Submerged vegetation was found only in the lower Bayou Teche. Common freshwater crustaceans are limited to river shrimp, grass shrimp, and several species of crayfishes. The native invertebrate fauna seems to be low in diversity, with tubificids, associated with low oxygen (Appendix D), most common in fresh water. The Vermilion River differed from Bayou Teche in having more pea clams and crayfishes in contrast to river shrimp. No doubt, other animals are common in some unsampled habitats in the rivers. The estuarine mollusks and crustaceans of the area are fairly well known due to studies in the Vermilion Bay area by Dugas (1970), Gooch (1971), Fontenot (1967), Hebert (1968), Morton (1973), and Hoese (1972). Only brackish water clams (*Rangia cuneata*) and false mussels (*Congeria leucophaeta*)

are common among the mollusks, but ribbed mussels (Geukensia demissa) and marsh clams (Polymesoda caroliniana), which are intertidal, would probably be more common were it not for the practice of burning the marsh. None of these species are utilized directly by humans, but brackish water clams are very important as a food source for many animals including waterfowl, fishes, crabs, and probably for a number of other animals.

(5) Uses [commercial, sports, and esthetics of (1), (2), (3), (4)]. The direct uses of the aquatic resources of the area are confined predominately to crayfish, catfish, gar, and a few other incidental fishes taken mostly by sportfishermen. Although Freshwater Bayou has a large estuarine fauna, the largest catch, both commercially and by sportsmen, is probably blue catfish which is caught both in the bayou and in adjacent waterways. Food of the blue catfish consists mainly of crabs, shrimp, fish, crayfish, and clams, all of which inhabit the area. Freshwater Bayou serves to some extent as an access to the marsh for larvae and young of many commercial species of marine crustaceans and fishes. Juneau (1973) found many such species just off the mouth of the bayou. Some, such as white shrimp, are found also inside the lower ends of Bayous Vermilion and Teche, which are surrounded by large marshes and swamps. These areas serve as nursery grounds for many species including white shrimp. The most common marine species using these marshes as a nursery are menhaden, croaker, and sand seatrout. Bayou Teche and Vermilion River also have a commercial catfish fishery (both for blue, channel, and occasional flathead catfish) but there is relatively little fishery for other species directly in the river channels. Many adjacent waterways, especially in the Bayou Teche drainage, support several fisheries including ponds for raising of crayfish and catfish. It is not known what the catch in the project area is but the state has been producing about five million pounds of catfish and crayfish a year. A few freshwater drum and gar are also caught in these waterways. Although there are probably a large number of crustaceans important to the area, only the decapod crustaceans have received much study. The white shrimp is the most common species, with large numbers utilizing the estuary as a nursery ground. A small number of brown shrimp grow up there in the spring and fair numbers of mature and oviparous river shrimp invade the low salinity areas in the spring.

(6) Endangered and threatened species. There are no endangered or threatened aquatic species in the area. However, one species of freshwater mussel, Margaritifera hembeli, occurs adjacent to the study area (Rapides Parish) and currently has more restricted populations than many official endangered species. Three sea turtles, the Atlantic ridley, the hawksbill turtle, and the leatherback turtle, presently considered endangered, may occur in the Gulf waters in the project area.

In the 25 September 1975 Federal Register, the Department of Interior reclassified the alligator as threatened instead of endangered in Cameron, Calcasieu, and Vermilion Parishes. A controlled hunt was held in these parishes in the fall of 1975.

2.06 RECREATIONAL ELEMENTS

a. General description of existing general recreational resources. The geographical contrasts of the six parish area include a combination of fields, forests, and marshes joined together by miles of rivers, lakes, bays, and bayous. The major landscapes available for recreation in the study area consist of coastal marsh, floodplain and coastal prairies. The following is a brief physical description of each area in order to give a general overview of existing recreational resources.

(1) Coastal Marsh. This physical division extends along the coast and is bordered by the barrier beaches and sand ridges--"chenieres" or "land islands". Examples of these in Vermilion are Chenier Au Tigre and Pecan Island. The marsh is the winter quarters for ducks and geese and excellent sea fishing is found adjacent to the coast. There is a paucity of good, sandy, bathing beaches in the area. Thus, basically this region offers hunting, fishing, boating, and swimming as recreational opportunities.

(2) Floodplain (alluvial). Predominantly flat, with elevations of about five feet, this physical division is found along the major river basins in the project area. It includes scenic waterways, especially in the Atchafalaya Basin portion of the eastern section of the region. These poorly drained areas are covered with forests of oak, gum, and cypress. This is an area with forested wetlands and offers fishing, hunting, boating, shrimping, and water skiing as recreational opportunities.

(3) Coastal Prairies. Located to the west of the Teche-Vermilion Basin this physical area is relatively flat, ranging from five feet above sea level to approximately 50 feet in some sections. However, waterfowl use the rice fields extensively in the winter and dove and quail are found in abundance where fence row cover exists. Thus, hunting is a major recreational opportunity offered here, together with some fishing.

b. Supply and demand for recreational resources. Through increased mobility, more leisure time, and greater affluence, new recreation opportunities have opened for many people in the six parish area who had only limited opportunities to experience them in the past. Popular areas have become overcrowded and the traditional recreation management has become more complex due to pressures of over use. Reference is made here to Tables 7 and 8 which give the supply and demand for recreational resources in the study area. In 1970-71 the six parishes in the study area sold 30,913 fishing permits and 44,091 hunting permits.

TABLE 7

SUPPLY OF OUTDOOR RECREATIONAL FACILITIES
FOR REGION 4, 1974 *

FACILITY	CUMULATIVE AREA OR SIZE	NUMBER
Swimming pools	219,225 sq. ft.	44
Swimming beaches	1,051,860 sq. ft.	12
Baseball fields	-----	140
Football fields	-----	26
Basketball courts	-----	47
Tennis courses	-----	122
Playgrounds with equipment	80 acres	71
Playgrounds w/o equipment	296 acres	59
Volleyball courts	-----	26
Grandstand seats for attending sports events	-----	34,745
Picnic tables	305 acres	849
Hunting acres	12,227 acres	--
Tent camping spaces	-----	81
Trailer camping spaces	-----	1164 (1126 hookups)
Total camping acres	263 acres	--
Cabins	-----	50
Camp building capacity	-----	for 425 people
Miniature golf course	-----	1
Nine-hole golf course	1,317 acres	25
Boat ramps	82 acres	81

TABLE 7 (Cont'd)

SUPPLY OF OUTDOOR RECREATIONAL FACILITIES
FOR REGION 4, 1974 *

FACILITY	AREA OR SIZE	NUMBER
Rental boats	-----	331
Fishing piers	539 feet	--
Horse trails	4 miles long	1
Motorcycle trail	1 mile long	1
Nature trails	18 miles long	9
Hiking trails	1 mile long	1
Bicycle trails	2 miles long	2
Scenic vista points	-----	3
Historical exhibits	-----	10

* Region 4 consists of Acadia, Evangeline, Iberia, Lafayette, St. Landry. St. Martin, St. Mary, and Vermilion Parishes.

Source: Outdoor Recreation Louisiana 1975-1980, State Parks and Recreation Commission, June, 1974.

TABLE 8

DEMAND FOR OUTDOOR ACTIVITIES IN ACADIA, EVANGELINE, IBERIA, LAFAYETTE,

ST. LANDRY, ST. MARTIN, ST. MARY, & VERMILION PARISHES

Activity		User Days 1970	User Days 1975	User Days 1980	User Days 1985
Swimming-Pool	Summer	978,485	1,071,875	1,176,565	1,292,645
	Summer Sunday	28,180	30,870	33,885	37,228
-Beach	Summer	553,823	606,681	665,936	731,637
	Summer Sunday	15,950	17,472	19,178	21,071
Bicycling	Summer	1,207,450	1,322,694	1,451,881	1,595,123
	Summer Sunday	34,775	38,094	41,814	45,939
Driving for Pleasure	Summer	812, 143	889,656	976,548	1,072,895
	Summer Sunday	23,390	25,622	28,124	30,899
Playing Outdoor Games	Summer	763, 218	836,063	917,721	1,008,263
	Summer Sunday	21,981	24,079	26,430	29,066
Fishing	Summer	612,532	670,994	736,530	809,195
	Summer Sunday	17,641	19,325	21,212	23,304

TABLE 8 (Cont'd)

Walking for Pleasure	Summer	545,995	598,106	656,523	569,823
	Summer Sunday	15,725	17,225	18,907	16,410
Sightseeing	Summer	473,587	518,788	569,457	625,640
	Summer Sunday	13,639	14,941	16,400	18,018
Attending Outdoor Sports Events	Summer	410,964	450,188	494,157	542,910
	Summer Sunday	11,836	12,965	14,231	15,635
Picnicking	Summer	350,298	383,731	421,210	462,766
	Summer Sunday	10,089	11,051	12,130	13,327
Motor Boating	Summer	336,599	368,725	404,738	444,669
	Summer Sunday	9,694	10,619	11,656	12,806
Hunting	Fall/Winter	324,857	355,863	390,620	429,158
	Fall/Winter/Sunday	9,356	10,249	11,249	12,359
Camping-Trailer	Summer	152,644	169,553	183,544	201,650
	Summer Sunday	4,396	4,883	5,286	5,807

TABLE 8 (Cont'd)

Camping-tent	Summer	109,590	121,730	131,775	144,776
	Summer Sunday	3,156	3,506	3,795	4,169
Crabbing	Summer	160,472	178,248	192,957	211,993
	Summer Sunday	4,622	4,883	5,557	6,105
Horseback Riding	Summer	140,902	156,510	169,425	186,140
	Summer Sunday	4,058	4,507	4,879	5,360
Bird Watching	Summer	131,117	145,641	157,660	173,214
	Summer Sunday	3,776	4,194	4,540	4,988
Water Skiing	Summer	117,418	130,425	141,188	155,117
	Summer Sunday	3,382	3,756	4,066	4,467
Crawfishing	Summer	95,891	106,514	115,303	126,679
	Summer Sunday	2,762	3,068	3,320	3,648
Playing Golf	Summer	88,064	97,819	105,891	116,338
	Summer Sunday	2,536	5,349	5,645	3,350

TABLE 8 (Cont'd)

Nature Walks	Summer	80,236	89,124	96,478	105,996
	Summer Sunday	2,311	2,567	2,778	3,052
Hiking	Summer	64,580	71,734	77,653	85,314
	Summer Sunday	1,860	2,066	2,236	2,457
Attending Outdoor Concerts, Plays	Summer	29,355	32,606	35,297	38,779
	Summer Sunday	845	939	1,016	1,116
Canoeing	Summer	27,398	30,433	32,944	36,194
	Summer Sunday	789	876	945	1,042
Sailing	Summer	13,699	15,216	16,472	18,097
	Summer Sunday	395	438	474	521

Source: Louisiana State Comprehensive Outdoor Recreation Plan 1970-75. Prepared June 1971.

2.07 ARCHEOLOGICAL AND HISTORICAL ELEMENTS

a. Archeological general.

(1) Overview of existing data.

(a) Paleo-Indian. This is the oldest cultural period represented in the project area. It is generally thought to date between 10,000 - 6,000 B.C. Very little is known about the nature of Paleo-Indian culture; our only evidence takes the form of scattered projectile points on sites of later age or occasionally a concentration of typical lithics (an actual living area or use area) on old stable landforms. Available information about Paleo-Indian culture is derived by comparison with or extension of information from the Desert Southwest or Plains. Its internal chronology, from the Clovis elephant hunters through the Folsom and Agate Basin bison hunters, is often extended to Louisiana without reservation (Haag, 1965). Similarly, the western Paleo-Indian lifestyle of small, egalitarian, migratory groups who were constantly on the move in an effort to keep up with the large Pleistocene elephants and bison on which they depended for food is also generally applied to Louisiana. One reconstruction of Louisiana Paleo-Indian social life, based on general ethnographic analogies and not hypothesis-testing, paints a fanciful picture of small bands moving within confined hunting territories, having egalitarian social systems, big-men leaders (situational advisors, not chiefs), patrilocal residence (newly-weds live with groom's people), interband marriage (because of incest taboos), and age and sex division of labor (Gibson, 1970:18-19,38). Several of these ideas are now questionable in light of recent research. Chronologically and culturally, there is tantalizing evidence that two and not just one cultural pattern may have been in existence during this era; one bearing the traditional lithic assemblage and based on hunting, and the other, the "Lithic" stage, which differed in basic stone-working technology, lacked diagnostic Paleo projectile points, and may have represented a mixed foraging-hunting type of adaptation (cf. Gagliano, 1969, n.d.). New geomorphic interpretations and settlement pattern studies (Gagliano and Gibson, n.d.) suggest the possibility that the South Louisiana environments to which these peoples were adapted may have been active, or recently inactive, Mississippi River levees, crevasses, and backswamp-flanking lake perimeters and not the short grass prairies and small forest-enclosed meadows.

(b) Archaic. With the close of the Paleo-Indian period, the native cultures underwent a transformation which culminated in a long enduring tradition, known as the Archaic, which lasted from 6,000 - 1,500 B.C. The roots of the Archaic clearly lie in the late Paleo-Indian (or possibly

"Lithic" stage) groups, and its emergence was no doubt prompted by a combination of factors, which probably include the myriad of consequences relating to the last glacial retreat (extinction of large Ice-Age animals, shifting courses and regimes of the Mississippi River, and possibly changes in vegetation cover and animal populations) and to the continuing process of "setting-in" (Gibson, 1975) within localized Louisiana micro-environments. Broad, heavy-bodied, notched, stemmed, and shouldered projectile points replaced the fluted, or basically-thinned lanceolate Paleo types, suggesting a major change in hunting techniques; from an early phase (Paleo) of cooperative hunting using stabbing spears to the later Archaic pattern of solitary ambush or stalking techniques using hand-thrown or atlatl-propelled javelins. The specialized, small chipped stone, tool assemblage of the Paleo-Indian period gave way to the generalized, large chipped and ground stone assemblage of the Archaic. Archaic tool pre-forms were produced simply as a consequence of making bifacial artifacts (projectile points, scrapers, gouges,etc.) and were not especially produced by a core-blade-flake technology as the Paleo-Indian tool preforms had been; another significant difference between the periods. The appearance of ground stone mortars, pitted stones, and battered cobbles speaks for the heightened exploitation of nut crops--acorns, pecans, hickorynuts and walnuts. Deer had become the principal game animal of Archaic peoples. Sometime before the close of the Archaic period, polished stone artifacts, including atlatl weights, boat stones, beads, and others, were made; some of them from nonlocal material indicating the emergence of foreign trade or long-distance exploitation. Again, little is known of the social aspects of Archaic groups, other than the fact that they were small, probably seasonally migratory to a degree, and were gearing more and more into localized environments--which led to the pronounced regional variability noted during Archaic times (Gibson, 1975). Many of the groups may have attained the tribal level of cultural devel-opment, and the apparently increased role of the woman in food procuration may have resulted in changes in kinship and rules of post-marital residence. Strong, permanent leaders were no doubt still lacking, although generous, brave and intelligent persons may have held leadership positions analogous to those of "chiefs" of later times. The Archaic family, like its Paleo-Indian predecessor, evidently was the basic unit of production and consumption--these requirements not yet even partially usurped by tribal-wide organizations or associations.

(c) <u>Poverty Point</u>. Around 1500 B.C., certain enclaves of Archaic peoples experienced a sweeping and dramatic reorganization, so eventful and total that archeologists con-sider them as comprising a distinctive culture--the Poverty Point culture. It appears that all Archaic groups were not so immediately

affected by these changes--some would never be. But large isolated pockets of people who were living along the immediate edges of the Mississippi alluvial valley where major streams impinged against the valley walls were radically transformed (Gibson, 1973, 1974a). Some scholars have maintained that Mesoamerican (Olmec) influences were responsible for this accelerated cultural change (Webb, 1968; Ford, 1969), but this is somewhat doubtful in view of the early date of emergence of Poverty Point culture (prior to Olmec); nor can historical connections be scientifically proved (cf. Gibson, 1971). In all likelihood, the causative factors were many, were primarily endemic, and included among others--increasing warfare, economic exchanges across ecological boundaries (Gibson, 1973, 1974a, n.d.), and settlement and transportational logistics. In restricted territories along the edges of the Mississippi alluvial valley, the Archaic pattern of seasonal resettlement was supplanted by village sedentism. The need for year-round food was met by alternatives to seasonal movement, i.e., redistribution or the centralized collecting and reallocating of economic produce. The most advantageously located village of the several involved in each recirculation net, or interaction sphere, grew in importance and size in direct relationship to its role as the central economic hub for its district. Leaders assumed roles of authority never before realized by Paleo-Indian or Archaic headmen; they had become true chiefs, who, without doubt, must have governed with supreme, religiously-derived, powers, although they still lacked the might of military support. Specialized craftsmen were supported by the surplus generated by the redistribution system. And the administrative positions in the society must have also been subsidized, at least partially, from the community-wide stores. So successful was the economic system that large labor forces were periodically freed from mundane tasks to build public monuments, e.g. mounds and embankments, especially at the cultural nucleus--the Poverty Point site in northeastern Louisiana; quarrying parties were sent to areas as far away as 1100 km to retrievespecial kinds of rocks and minerals which the society deemed important; and "foreign" diplomatic teams may have been subsidized. All of this was accomplished despite the apparent absence of maize horticulture (Gibson, 1973). Although, for the sake of completeness, it should at least be mentioned that some scholars argue that Poverty Point was agricultural. Poverty Point material culture reflects this crystallization of society, the complexity or organization and activities. The cultural zenith was achieved at the big Poverty Point site, some 350 km north of the survey area, where over 100,000 artifacts have been studied (Ford and Webb, 1956; Webb, 1968,1970; Gibson, 1971b,1973). Major classes of artifacts include baked clay objects (used in earth oven cookery), microliths (especially "Jaketown perforators" whose function is undetermined), stone

vessels, chipped stone tools, polished stone tools, projectile points, plummets and other iron ore objects, beads, pendants, and other lapidary items, polished problematicals, and numerous other minor classes (Webb, Ford, and Gagliano n.d.). Many of these artifacts are made from raw materials, which were taken from at least 12 separate (and probably many more) foreign source areas(Gibson, 1973). Not all of these artifact classes nor all of the raw materials which occur at the Poverty Point site are found in all of the isolated locales where Poverty Point culture emerged; no doubt a function of the ease of communication and transportation among these districts, which seems to have followed major connecting waterways. Poverty Point culture was composed of several chiefdoms, i.e., redistributive societies having centralized coordinating agencies (Service, 1962). It represented the earliest attainment of this complex social organization on the North American continent. The existence of certain social organizational details of the Poverty Point site has been previously demonstrated (Gibson, 1973, 1974a); these included social ranking, matrilocality (newly-weds live with bride's family) dualism (community divided into two parts to perform reciprocal services), and marriages predicated on rank and moiety exogamy (everyone had to marry outside his own social rank and his own moiety--one of the halves in dualistic arrangements). Whether the smaller chiefdoms possessed all, or even most, of these details has not been effectively demonstrated. Certainly none of them attained the impressive size, complexity, or grand sophistication of the Poverty Point chiefdom itself.

(d) Tchefuncte. With the disappearance of the elaborate Poverty Point culture came a rather drab, lack-luster culture, known as Tchefuncte (Ford and Quimby, 1945). The Tchefuncte culture was the dominant manifestation in the Mississippi River lowlands from about 600 to 100 B.C. Although Tchefuncte culture appears to have radically declined in terms of socio-political complexity (Gibson, 1974b), it set the stage, especially with its efficient use of floodplain environments, for all subsequent cultures in the Lower Mississippi Valley until maize horticulture was assimilated about A.D. 900. Chiefdoms declined into tribes. The elaborate trade and redistributive network of the Poverty Point culture was supplanted by autonomous village production of wild foods and raw materials. To achieve this economic independence, Tchefuncte villages, at least in the survey area, were founded in ecotones, narrow zones of transition where multiple environments came together (Gibson, 1974b, 1975b). Such optimum positioning made the various seasonally available wild foods accessible from a single location removing the need to shift village locations with the changing seasons. This sedentism, coupled with the development of new food exploitative systems and the adoption, for the first time in great numbers, of pottery

cooking and storage devices, provided Tchefuncte "tribes" with the efficient means to grow and spread into previously unoccupied areas of the lowlands. The Tchefuncte expansion of the last few centuries before the Christian era must have greatly resembled the much later spread of European pioneers. The material culture of these peoples reflects these novel approaches to floodplain survival. Pottery of many distinctive types was made in abundance; projectile points, predominantly of the small, stemmed and shouldered, varieties dominated the implement category, but bone and antler points were also made. Other tools included barweights, small grooved plummets, awls, gouges, and minor items. Low, conical mounds were sometimes built to cover multiple burials. Houses seem to have been small and round. We know little about the social and political systems of Tchefuncte groups. Based on burial mound contents (especially the Lafayette Mounds, 16SM10) Tchefuncte society seems to have been egalitarian, that is, was not divided into ranks or classes. Some chiefly authority is manifest in the organization of conscripted labor required to build the burial mounds, but the source of this power must have been religious and not just secular. Residental and kinship patterns remain totally unknown.

(e) Marksville. Arising from this Tchefuncte cultural base around 100 B.C. was another sophisticated cultural phenomenon, called Marksville. Archaeologists are divided as to whether Marksville was a full-fledged culture as were Poverty Point and Tchefuncte or whether it was really just an exclusive burial cult, social system, or gigantic commerce network. Part of the reason for this unsureness derives from the fact that most of the knowledge of Marksville is limited to burial mound contents--certainly a limited aspect of any culture (Ford and Willey, 1940; Fowke, 1927). The domestic side of Marksville has not been appreciated because the diagnostic material cultural traits, such as the zoned rocker stamped pottery, copper and galena ornaments, greenstone celts, and platform pipes, are restricted to mortuary contexts (Gibson, 1970). Several observations, however, lead to the conviction that not only was Marksville a true, complete culture but that it was a highly evolved one, recapturing much of the sophistication that had been present in Poverty Point. Chiefdoms were probably again the basic socio-political units judging from: the apparent cultural territorality, emergence of local redistributive systems--a consequence of the vast Hopewellian trade network, the reappearance of ranked social heirarchies (based on grave goodsplacements by burial positions rather than by sex or age), and the conscription of public labor forces to build burial mounds and other earthworks. A recent comparative study of Tchefuncte, Marksville, and Issaquena pottery from Bayou Tortue (16LY1) has shown what appears to be high levels of anxiety in the Marksville ceramic art--a psychological

trait associated with complex societies (Breaux and Sealy, n.d.). Other social and political aspects of Marksvillian culture remain uninvestigated, but certainly when and if the necessary data and interpretive techniques emerge, the Marksville culture will prove to have been one of the high points of cultural evolution in the lower Mississippi Valley.

(f) Issaquena. About A.D. 300, the elaborate Marksvillian ceremonialism, as expressed in burial mound construction, destruction of lavish wealth, and importation of raw materials from distant areas came to a halt, and a rather mundane, unspectacular culture ensued. The Issaquena culture, as it is called (Greengo, 1964), did manage to continue much of the stylistic and technological qualities of Marksville but in changed functional contexts. Pottery, resembling Marksvillian mortuary ware, was made but was evidently used for domestic cooking and storage. The mortuary practices became unsophisticated without the elaborate trappings and without attendant mound burial. In the Vermilion Valley, stone, even the local varieties for tool manufacture, was imported in very limited quantities. Domestic equipment was made of bone, shell, antler, and no doubt, wood. Bone and antler projectile points, bone awls, antler drifts, and other artifacts dominated the tool types. Superficially, Issaquena culture seems to have been simpler than its progenitor, but this may be misleading. Chiefdoms, the most sophisticated socio-political organizations in Lower Valley complex societies, were highly unstable--one might almost say, cyclically unstable. Coalescence followed by disunity was practically guaranteed by their internal nature. Issaquena culture seems to represent the period of chiefdom disorganization; it marked the beginnings of a period of emerging tribes. Breaux and Sealy (n.d.) have demonstrated what is probably less latent anxiety (and aggression) in Issaquena art motifs, which is in keeping with the society's presumed reduction in cultural complexity. Kinship, residence patterns, integrating associations, and other aspects of social and political organizations have yet to be elucidated.

(g) Troyville. Troyville, which endured from A.D. 600-900, represented a continuance of Issaquena culture in a modified material culture fabric. The everyday household equipment was largely a hold-over from the preceding culture, although stylistic differences, particularly in pottery motifs, are evident. Novel pottery types include red painted, banded red painted, and zoned cursive incised types. Small stone projectile points seem to make initial appearances, and may indicate the adoption of a new hunting device--the bow and arrow. The settlement and exploitive systems of Troyville were geared to a variety of floodplain niches, and the culture spread throughout many previously disused wetland zones in a fashion similar to the

Tchefuncte expansion, some 1200 years earlier. This expansion and presumed population growth may have been partially consequential on the improved economic efficiency of the bow and arrow. There is still no direct evidence of maize horticulture nor does it seem likely to emerge. Virtually nothing is known about Troyville social and political systems. It is suspected that societies were organized on a tribal level, much like the Issaquena forerunners, although Troyville groups may have been larger. There were certainly no large scale intertribal integrating mechanisms comparable to those of Poverty Point or Marksville cultures. Most archaeologists tend to merge late Troyville with the succeeding Coles Creek culture, alluding to an unbroken continuum (cf. Ford, 1951). However, closer inspection reveals that one of the strongest discontinuities in Lower Valley cultural evolution hinges on the separation between Troyville and Coles Creek. Virtually every aspect of culture from pottery and stonework types and styles to settlement and adaptive patterns appears to differ radically (cf. Belmont, 1969). And there is little doubt that the sociological, ideological, and attitudinal levels of culture were also distinctive. There are few areas of recognized continuities. The break was strong and complete; a way of life whose roots lay deep in the Archaic period came to an end with the disappearance of Troyville culture.

(h) Coles Creek. Coles Creek culture seems to have replaced Troyville culture virtually everywhere in the Lower Valley sometime during the eighth and ninth century A.D. The causes and processes of its emergence are obscure. Stimulation from the advanced cultures of Mexico is often presumed (Ford, 1951), but has not been successfully demonstrated, nor can it be under present canons. With the advent of Coles Creek culture came new pottery styles, characterized by design simplicity and manufacturing excellence; a further reduction in stonework of all kinds, except for the production of a variety of arrowheads; and rectangular, rather than circular, houses. Fullscale horticulture, based on corn (and possible squash and beans) was probably practiced. This in turn stimulated population growth and residential nucleation in areas exceptionally suited for farming. Increased town living demanded heightened social and political control, and this need seems to have been met by the creation of a priest-chief type of government--a type that actually survived into historic times. It apparently ruled by secular and religious sanctions, rather than by force, and represented the peak of the ranked social hierarchies of Coles Creek chiefdoms. The towns where the priest-chief and other officials resided were the pivotal points for social and economic interaction within affiliated provinces; they grew to large sizes in some cases and were often distinguished by a temple mound-central plaza complex ringed by domestic residences. The Coles Creek

mounds differed significantly in both form and function from their conical predecessors in the Poverty Point, Tchefuncte, and Marksville periods. They were generally rectangular with flat tops and served as foundations for the houses of the chief and for the temple. There has been virtually no study of Coles Creek socio-political organization. However, a ranked social system was probably basic to Coles Creek culture; the territorality and regional variability that is exhibited in settlement distributions can be cited as an indication that individual Coles Creek communities (districts) may have represented theocratic chiefdoms. Their coalescence was probably rooted in the rise of religio-secular managerial lineages which controlled the flow of economy and directed war-peace activities, which by this time had become an elemental part of living. The innovations and life styles of the Coles Creek culture had profound and lasting impact on all subsequent cultures in the Lower Valley.

(i) Plaquemine. The growth of Plaquemine culture out of Coles Creek was a gradual one, marked by continued refinements, occasional replacements, and some deterioration. These developments seem to have occurred with increasing rapidity by A.D. 1200 and continued until the sixteenth to eighteenth century. Plaquemine culture in several Louisiana river valleys reached heights previously unknown in Lower Valley cultural evolution, but the present project area seems not to have been among those advanced regions. Whereas those regions were dominated by extremely large towns (of several thousand inhabitants) with impressively huge temple mounds, plazas, and in some cases, encircling palisades, the corresponding settlements along the Teche-Vermilion were small and undistinguished villages. In general terms, Plaquemine pottery, as well as most other items of material culture, was clearly an outgrowth of Coles Creek predecessors. Technological deterioration and careless design execution characterizes the ceramic arts, but exceptions occur and several of the novel designs show freer line flow and less rigidity than Coles Creek styles. Mortuary ceremonialism was much like Coles Creek practices, but, the charnel house storage-reburial-ritual sacrifice complex was carried to an extreme, a clear indication of the "ramage", or socially ranked structures of most Plaquemine societies. Records of the early explorers and colonists, who observed the Plaquemine culture during its zenith, noted that this type of revered treatment was reserved for the chiefs and their immediate families, who had actually become earth-bound "gods" in terms of their authority and respect they commanded from the substratum of obedient commoners. All of this and more--solar religion, institutionalized warfare, efficient horticulture, and other features of complex societies--characterized many Plaquemine districts, but along the Teche and Vermilion Bayous,

they existed in a "watered down" form.

(j) Historic-aboriginal. The local version (or versions) of the Plaquemine culture appear to have lasted for slightly longer in South Central Louisiana than elsewhere because the disrupting impact of the Europeans was slower in arriving. The French colonials and early Acadian settlers found Plaquemine culture still flourishing as late as the mid-1700's. By that time, tribal names and affiliations are known; the Vermilion band of Attakapas and the Chitimacha of the lower Bayou Teche-Grand Lake area were historic representatives of Plaquemine culture. Apparently many items of material culture were shared by these two distinctive groups of people, but, in terms of social and governmental organizations, they may have been worlds apart (Swanton, 1911; Dyer, 1917). The Vermilion Attakapas were evidently a band, with situational leadership, and egalitarian social structure; the Chitimacha, on the other hand, were probably chiefdom (or chiefdoms), with supreme hereditary rulers, and a strictly ranked social structure, which was as close to a true caste system as was known on the North American mainland (Swanton, 1911). The main Attakapas village lay somewhere between Bayou Teche and the Vermilion River. In 1760, Skunnemoke, the chief, sold the village and a large tract of land to a Mr. Fusillier de la Clair but continued to live there until early in the 1800's (Swanton, 1911:360-361), after which they joined their brothers on the Mermentau River. If the name St. Clair was derived from the French man who perchased the land and if it was applied to a bayou which cross-cut this particular parcel of land, the vestiges of the Attakapas Village of Skunnemoke may have been located along a 2.0 km reach of Bayou St. Clair, a major Vermilion River tributary. The Chitimacha of the eighteenth century are said to have lived in 17 villages along Grand Lake, Lake Fausse Point, and Bayou Portage. Several of the villages have probably been relocated, but precise identifications have not been made. By the late 1800's, they had been reduced to a single village along Bayou Teche at Charenton, where a federal reservation is now maintained.

(2) Types of sites and locations. Sites found during the project fieldwork as well as those known from previous investigations are listed in Appendix F, Cultural Resources.

(3) Status. Consultation with National Register of Historic Places, as published in the 4 February, 1975-1976 Federal Register, and daily supplements through 5 February 1976, reveals that no archeological sites in the project area are included. A copy of this draft environmental statement will be sent the state archeologist for his review and comments.

b. Historical general.

(1) Historical pattern, communities and sites.

(a) Early exploration. The activities of the earliest European explorers--DeSoto-Moscoso, LaSalle, Iberville-Bienville, and others, were largely confined to the Mississippi River and Gulf Coast. There was apparently little or no impetus to settle along Bayou Teche and the Vermilion River and in the marshy area around the present-day Freshwater Bayou; indeed, there may have been strong motivation to avoid the area. The cannibalistic reputation of the native inhabitants of this region--the Attakapas Indians--while perhaps largely undeserved, was so ingrained in the Europeans' perceptions of the area that it was evidently a powerful dissuadant to settlement. Besides, the Attakapas and their neighbors along the lower reaches of Bayou Teche, the Chitimacha, had little of commercial value to offer, except for an occasional horse, a few furs, and some smelly bear and alligator oil. Major physical barriers, particularly the great Atchafalaya swamp, were also tremendous obstacles to settlement and trading ease.

(b) Early settlement. Around 1765, the earliest Acadians began to arrive in the present survey area, following their deportation from Acadia (Nova Scotia). The isolation and distance from the major seat of government, then under Spanish control through agreements in the treaty ending the French and Indian War, were desirable factors to the ousted Acadians, who were looking merely to be left alone. Two frontier posts, the Poste des Attakapas (present-day St. Martinville) and Poste des Opelousas (the original site believed to lie near St. Landry Parish and Church in Opelousas) were established in the mid-1700's. These posts were focal points for commerce, military activities, and settlement first under the French, then under the Spanish (1763-1800), then back to the French (1800-1803), and finally under American control following the Louisiana Purchase. The era of Spanish control in the survey region left few visible, lasting effects on the land and its people; a few place and family names, land grant allotments, and the introduction of cattle-raising are virtually all that remains of the four decades of Spanish domination. The culture of the deported Acadians flourished; it took on special characteristics as the people settled into the peculiar South Louisiana bayou, marsh, and prairie environments. The ultimate result was Cajun culture; a strong, viable lifeway which absorbed all outsiders and diluted extra-cultural influences. The lifeways of the Cajuns were solidified by the encircling settlement of Anglo-Saxon protestants from the piney hills country of the southeastern states. The zone of contact was sharp; the differences in attitudes, values, and lifeways between these two cultures caused an entrenchment of both and assured their long-time continuance.

(c) Expansion period. Following the end of the American Revolutionary War in 1783, the survey area experienced steady population expansion. Few changes occurred in the firmly established cultural patterns, but the growing importance of sugarcane did bring the plantation system and an incipient social stratification to Cajun culture. Although sugarcane had been planted in Louisiana as early as 1699 (introduced by Pierre le Moyne Sieur Iberville), its great economic impact was not realized until efficient granulating processes were developed by Etienne de Bore in the late 18th century. The line settlements of the original Acadian settlers gave way in many places along Bayou Teche and the Vermilion River to the bayou block settlement pattern--a direct consequence of the plantation system. The plantation, with its large house and grounds, workers' shanties, sugar mill, and company store inspired population nucleation, and towns grew at many plantation sites. These towns often took the name of the plantation; e.g. Ruth, Loisel, Adeline, Oaklawn, and Calumet along Bayou Teche. The plantation system brought great wealth to many plantation families. This wealth rapidly brought social barriers to Acadiana. The average Cajun, whose traditional heritage was that of a peasant farmer, found himself relegated to a lower social position, and the Negro slaves assumed the basal stratum in the fledgling social hierarchy. Thus it is not surprising today to find that many Cajuns deny that many of the old wealthy families, whose riches derived from the plantation era, are Cajun at all, even though their heritage is the same as their own. The steady but leisurely economic growth of the area was only partially interrupted by the Civil War in 1861-1865. Several small skirmishes took place within the survey area, at Spanish Lake near New Iberia, at Franklin, at Vermilionville (now Lafayette), and at other spots immediately outside the study area; e.g. Bayou Bourbeaux and Bayou LaRose. Some of these areas have been identified and a variety of Civil War armaments and trappings have been collected by local historical enthusiasts. Several Confederate gunboats were deliberately scuttled in Bayou Teche in a effort in impede Yankee penetration; the approximate locations of the "Diana" and the "Hart" are known but have not been definitely established.

(d) The post-Civil War era. Neither the actual battles nor the war itself significantly changed the existing cultural traditions of Acadiana. However, the post-Civil War period brought massive changes in farming technology and the geographic isolationism of Acadiana began to rapidly dissolve with the construction of roads, bridges, railroads, and improvements in stream navigability. Rapidly after 1900, modern conveyances, especially the automobile, led to an influx of outsiders. The cypress lumbering industry developed and incorporated many local sons in a novel livelihood. The discovery of the bountiful mineral resources in Acadiana--oil, gas, sulphur, and salt (and Rangia shell) led to the emergence of a modern and reconstituted Acadiana without totally cancelling out its long-standing traditions.

(e) Contemporary Acadiana. The last few decades have witnessed sweeping changes throughout much of Acadiana. Modernization, wealth, and education have moved the typical rural Cajun from a folk cultural stage into the 20th century. This major change is only now in the final stages of culmination. The present generation of young adults is the first to generally lack the ability to speak the Louisiana French language, to emphasize the nuclear family over the traditional extended family, to deemphasize the importance of Roman Catholicism, and to become a true urbanite or suburbanite. Many of the traditional folk occupations of Cajun culture have been given up or have assumed the role of crafts or hobbies. The old domestic architectural styles have been replaced by low-profiled brick houses. Preparation of the typical Cajun foods has now become a weekend phenomenon and even that is being rapidly usurped by "going-out to eat." Acadiana has become a region of large mechanized farms, of oil and gas production, and of cities which offer a variety of services and opportunities. But in spite of these sweeping changes, there remains a distinctiveness to the region, a difference which still sets Acadiana apart from other regions. This difference is basically manifest in human values and attitudes--in something we might call the "human spirit".

(2) & (3). Status and register. The prominent historical sites, places, buildings, and scenes of events are provided in tabular form in Appendix F, Cultural Resources. The National Register of Historical Places as published in the Federal Register dated 4 February 1975-1976 and the daily supplements through 5 February 1976 thereto have been consulted and no National Register properties are listed which would be affected by the proposed actions. A copy of this draft environmental statement will be sent to the Advisory Council on Historic Preservation and to the Louisiana State Historic Preservation Officer for their review and comments. Their comments will be incorporated into the final environmental statement.

2.03 SOCIOECONOMIC ELEMENTS

a. Areas and population. The dredging of the Teche, Vermilion and Freshwater bayous would affect the parishes of Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion. This six-parish area is one of a growing population and has a diverse agricultural base, abundant natural resources, and a variety of wildlife concentrations. Generally, most of the parishes are experiencing economic growth with possibly the exception of one or two. Parishes with a rapidly growing population and a dynamic economy are Iberia, Lafayette, and St. Mary. The other parishes of St. Landry, St. Martin, and Vermilion are not presently experiencing the same degree of economic growth. This is directly related to the fact that these parishes have a more agricultural economic base compared to the more industrial base of Iberia, Lafayette, and St. Mary. Also, Iberia, Lafayette, and St. Mary are classified as urban parishes since over half of their population resides in cities and towns. On the other hand, St. Landry, St. Martin, and Vermilion still reflect a rural character, whereby a greater percentage of their populations inhabit rural areas. The larger cities in the study area in ranked order according to 1970 census data are: Lafayette, (68,908), New Iberia (30,147), Opelousas (20,121), Morgan City (16,586), Eunice (11,390), Abbeville (10,996), Franklin (9,325), St. Martinville (7,153), Jeanerette (6,322), Kaplan (5,540), and Breaux Bridge (4,942). The parishes of Iberia, Lafayette, St. Mary and the cities of New Iberia, Lafayette, and Morgan City are expected to grow rapidly in the next twenty-five years as indicated by population projections. Again, this is directly related to urbanization and industrialization. Reference is made to Tables 9, 10, 11 for population characteristics and projections for the study area.

b. Economy. The general economic activity of the study area is one of diversity which includes agricultural production, fisheries (fish and shellfish), manufacturing, minerals production, trade, and commerce.

(1) Mineral production and manufacturing.

(a) Mineral production. The economic activity related to mineral resources production ranks especially high in the study area, particularly in the coastal parishes of Vermilion, Iberia, and St. Mary. However, the remaining parishes are also producers of primary products such as petroleum and natural gas (see Table 12). An abundance of secondary products include: natural gas liquids, salt, sand, gravel, and shell. St. Mary Parish has led all others consistently since 1957. Its mineral production in 1972 totalled $524.9 million. The other two coastal parishes also show significant mineral production between the

TABLE 9

OBERS POPULATION PROJECTIONS

YEAR	WATER RESOURCES SUBAREA 808 LOUISIANA COASTAL*[1]	PROJECT AREA[2]
1970	750,632	385,680
1980	695,800	367,600
1990	702,900	371,400
2000	685,400	364,300
2010	N.A.	355,700
2020	664,600	353,100

* Louisiana Coastal Subarea 808 consists of the parishes of Acadia, Allen, Beauregard, Calcasieu, Cameron, Evangeline, Jeff Davis, Iberia, Lafayette, St. Landry, St. Martin, St. Mary, Vermilion, and Vernon.

Source: [1]U.S. Water Resources Council, 1972, OBERS Projections, Volume 3, April, 1974.

[2]U.S. Department of Commerce, Bureau of Economic Analysis Projections based on the series E Projected Populations of the U.S. Census Bureau.

TABLE 10

POPULATION PROJECTIONS FOR THE STUDY AREA

Parish	1970[1]	1980[2]	1990[2]
Iberia	57,397	67,419	80,027
Lafayette	111,643	136,934	169,152
St. Landry	80,364	80,467	81,092
St. Martin	32,453	36,158	40,628
St. Mary	60,752	73,898	90,717
Vermilion	43,071	47,277	52,836
Study Area	385,680	442,153	514,452
State	3,642,463	4,054,406	4,504,807

Source: [1]U.S. Dept. of Commerce, Bureau of the Census, 1970 Census of Population--Number of Inhabitants, Louisiana, as corrected.

[2]Christou, G. C. and Harris S. Segal, <u>Populations to 1980 and 1990: Louisiana and its Parishes</u>, 1973.

TABLE 11

POPULATION DATA

Parish	1950	% Change 1950-60	% Net Migration 1950-60	1960	% Change 1960-70	% Net Migration 1960-70	1970
Iberia	40,059	28.9	+1.74	51,657	11.1	-7.97	57,397
Lafayette	57,743	46.6	+12.92	84,656	31.9	+7.36	111,643
St. Landry	78,476	3.49	-14.99	81,493	-1.4	-14.50	80,364
St. Martin	26,353	10.3	-11.04	29,063	11.7	-5.77	32,453
St. Mary	35,848	36.2	+7.16	48,833	24.4	+1.10	60,752
Vermilion	36,929	5.2	-11.03	38,855	10.9	-3.42	43,071
Study Area	275,408	21.5	-2.67	334,557	15.3	-3.55	385,680
State	2,683,516	21.4	-0.68	3,257,022	11.8	-2.94	3,642,463

Source: "Statistical Report of the Bureau of Vital Statistics" Louisiana State Department of Health, 1950-70.

U.S. Department of Commerce, Bureau of the Census, "U.S. Census of Population-Number of Inhabitants, 1950, 1960, 1970."

years 1957 to 1972. St. Landry and St. Martin parishes have increased production values over this same period of time; Lafayette in 1972 had mineral production valued at $16.3 million. The table indicates that the six-parish area has steadily increased its production value. Mineral production in 1972 in the study area was valued at $1,282.7 million, some 20% of the total value of Louisiana's 1972 production.

(b) Manufacturing. Manufacturing has always played a minor role in the economic development of the parishes within the project area. The most significant manufacturing activity is found in the food and kindred products industries (see Table 13).

(2) Agriculture. All six parishes in this region showed a loss in the number of farms during the period 1959 to 1969. Greatest precentage losses were undergone by St. Martin (-45.9%) and St. Landry (-43.1%). Lafayette farms dropped by 36.1% during the ten years; those in Iberia fell 26.6%; Vermilion lost 24.4% of its farms, and St. Mary suffered the smallest decrease--20.3%. Acreage of lands in farms remained stable during this time. Only St. Mary had any appreciable change in farm acreage, losing 13.4%. Although the number of farms have decreased, agricultural production still ranks high in the economic structure of these parishes. Its importance is indicated by the total value of all agricultural products in 1969 ($76,905,800 from approximately 1,022,858 acres of agricultural land. Some 15% of the value of Louisiana's agricultural production originated in the study area in 1969. The major crops grown in the study area are rice, sugarcane, soybeans, sweet potato, cotton, and corn. Reference is made to Table 14 for a more detailed look at the agricultural economic statistics for the area concerned. There is some livestock production in the study area. The total value of livestock, poultry and their products totalled $12,739,565 for the six parishes. This value represents 6.5% of the State total. Lafayette, Iberia, St. Landry and Vermilion were the leading parishes in production.

(3) Other economic activities.

(a) Services. In some of the parishes the expansion of the mineral industry and in others expanded urbanization have increased the need for supporting services. Table 15 illustrates the growth of the services sector in the study area between 1954 and 1972. The most urban parish, Lafayette, has a high ranking compared to the other five parishes since 1954 and shows a receipt figure of $ 80.6 million for 1972. The two other urban parishes of St. Mary and Iberia recorded receipts of $38.3 and 16.1 million, respectively, for the same year. Following in successive order are St. Landry with a receipt figure of $12.2 million while the two most rural parishes, Vermilion and St. Martin, were ranked the lowest.

TABLE 12

VALUES OF MINERAL PRODUCTION

(MILLIONS OF DOLLARS *)

Parish		1972	1971	1969	1967	1965	1963	1961	1959	1957
Iberia	$	311.5	298.2	235.5	144.4	92.2	91.1	85.4	68.2	69.9
Lafayette	$	16.3	19.6	18.3	20.0	14.0	14.0	8.6	4.3	2.6
St. Landry	$	37.3	42.6	51.0	56.2	47.4	45.1	45.7	35.3	32.1
St. Martin	$	80.0	89.7	89.1	101.3	64.5	61.7	48.9	50.3	43.9
St. Mary	$	524.9	536.8	390.2	328.3	234.9	176.9	143.8	102.6	79.8
Vermilion	$	312.7	312.1	295.5	153.9	149.1	144.5	99.1	73.4	48.6

TABLE 12 (Cont'd)

Study Area	$ 1,282.7	1,299.0	1,079.6	804.1	602.1	533.3	431.5	334.1	276.9
State	$ 5411.5	5,553.0	4,685.3	3,961.7	2,988.3	2,638.4	2,173.4	1,766.3	1,517.5

*Current dollars

$-denotes dollar value

P-denotes percentage of state value

Source: US Department of the Interior, Bureau of Mines Mineral Yearbook, "The Mineral Industry of Louisiana," 1971, 1969, 1967, 1965, 1963, 1961, 1959, 1958.

TABLE 13

MANUFACTURING TRENDS IN THE PROJECT AREA

MANUFACTURING EMPLOYMENT [1]

Parish		1972	1967	1963	1958	1954
Iberia	N	2,000	2,000	1,700	1,320	1,043
	P	1.1%	1.2%	1.2%	1.0%	0.7%
Lafayette	N	2,700	2,000	1,700	1,623	1,194
	P	1.5%	1.2%	1.2%	1.2%	0.8%
St. Landry	N	1,200	900	900	825	1,002
	P	0.6%	0.5%	0.6%	0.6%	0.7%
St. Martin	N	1,200	600	400	320	368
	P	0.6%	0.4%	0.3%	0.2%	0.2%
St. Mary	N	4,300	3,700	2,000	1,393	1,300
	P	2.3%	2.2%	1.4%	1.0%	1.2%
Vermilion	N	700	800	800	541	693
	P	0.3%	0.5%	0.6%	0.4%	0.5%

TABLE 13 (Cont'd)

Study Area	N	12,100	10,000	7,500	6,022	6,100
	P	6.7%	6.1%	5.4%	4.4%	4.2%
State	N	179,600	164,500	139,500	136,377	144,757
	P	100.0%	100.0%	100.0%	100.0%	100.0%

N-denotes number of employees

P-denotes percent of state total

[1]-Statistics prior to 1954 are not comparable to these later years due to changes in coverage for certain industries.

Source: US Department of Commerce, Bureau of the Census, Census of Manufactures, 1972, 1967, 1963 1958, 1954.

TABLE 14

INCOME FROM ALL AGRICULTURAL PRODUCTS, 1959, 1969, FOR THE STUDY AREA

(In Thousands of Dollars *)

Parish	1959	1969	1959-1969 % Change
Iberia	6,861.1	11,160.3	62.7
Lafayette	6,981.2	9,903.1	41.9
St. Landry	11,398.1	17,319.8	52.0
St. Martin	4,111.9	5,739.3	39.6
St. Mary	6,348.4	8,789.2	38.4
Vermilion	18,064.4	23,994.4	32.8
Study Area	53,765.1	76,906.1	43.0
State	334,907.2	496,406.6	48.2

Source: "Change in Louisiana Agriculture by Parishes, 1959-1969", Department of Agricultural Economics and Agribusiness, Louisiana State Univeristy.

* Current dollars

TABLE 15

SELECTED SERVICE RECEIPTS IN THE PROJECT AREA (MILLIONS) *

Parish		1972	1967	1963	1958	1954
Iberia	$	16.1	10.2	8.6	5.0	3.5
	P	1.1%	1.5%	1.8%	1.3%	1.3%
Lafayette	$	80.6	30.9	29.9	15.2	6.7
	P	5.4%	4.5%	6.3%	3.9%	2.4%
St. Landry	$	12.2	9.2	5.4	4.5	3.0
	P	0.8%	1.3%	1.1%	1.2%	1.1%
St. Martin	$	2.2	0.9	1.0	0.7	0.4
	P	0.1%	0.1%	0.2%	0.2%	0.1%
St. Mary	$	38.3	19.3	10.9	6.1	2.2
	P	2.6%	2.8%	2.3%	1.6%	0.8%
Vermilion	$	7.2	3.3	1.9	2.1	1.5
	P	0.5%	0.5%	0.4%	0.5%	0.5%

TABLE 15 (Cont'd)

Study Area	$	156.6	73.8	57.7	33.6	17.3
	P	10.6%	10.7%	12.1%	8.7%	6.3%
State	$	1482.4	688.2	476.1	387.0	276.2
	P	100.0%	100.0%	100.0%	100.0%	100.0%

* Current dollars

$-denotes dollar amount

P-denotes percent of state receipts.

Source: US Department of Commerce, Bureau of the Census, Census of Business, Selected Services, 1972, 1967, 1963, 1957, 1954.

(b) Wholesale and retail trade. Urbanization also has had a direct relation to the income from sales goods. Again, Lafayette ranks above the other parishes in its wholesale and retail trade receipts. Table 16 exhibits that Lafayette recorded wholesale receipts of \$324 million and retail of \$285 million in 1972. An increase is indicated for all the parishes in both wholesale and retail trade for the period between 1954 and 1972.

(c) Fisheries. Although commercial fishing industries are of importance to the coastal parishes in the project area, the trends in fishing employment are not discernible from the review of statistical data available. Generally, the small size of the average commercial fishing operator makes the collection of accurate information difficult. The commercial fish and shellfish landings for the study area are as follows. In 1972, 290.3 million pounds valued at \$16.7 million were taken in the study area. (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Annual Summaries, 1972 and 1973.). This represents 23.2% of the state and 2.4% of the U.S. fisheries. In 1973, 249.2 million pounds valued at \$9.9 million were taken in the study area. This represents 20.2% of the state value and 2.2% of the U.S. value. These figures account for the fish that might not have been caught in the waters of the project area, but were landed at ports within the parishes of the region. There has been a general decline in commercial production from this area in recent years both in its percents of state and U.S. value of production.

(d) Forestry. Commercial forest production is limited in the six parish area due to the small size of operations and the few people employed in this industry. However, the most significant production is found in St. Landry Parish. There is also some commercial production in the parishes of St. Martin, St. Mary and Iberia parishes.

(4) Income. All of the parishes in the study area were below the state-wide average in 1960, but St. Mary, Iberia, and Lafayette showed per capita income higher than the average in 1970 (see Table 17). Still lagging behind the state-wide per capita income figure were St. Martin, St. Landry, and Vermilion. The average per capita income in the study area in 1960 represented only 78% of the state average; by 1970, per capita income in the study area had increased to approximately that of the state as a whole, indicating a faster growth rate in the study area than experienced state-wide. While the study area's percentage of the state's population increased by 10% between 1960 and 1970, the study areas per capita income relative to the state-wide average increased by 26%, indicating that the per capita income

TABLE 16

WHOLESALE AND RETAIL TRADE IN PROJECT AREA

(MILLIONS)

	Wholesale Trade					Retail Trade				
Parish	1972	1967	1963	1957	1954	1972	1967	1963	1957	1954
Iberia	$ 96.4	54.1	14.1	39.5	38.7	111.1	74.4	50.6	45.7	36.5
	P 1.0%	0.8%	0.3%	1.0%	1.3%	1.5%	1.6%	1.5%	1.6%	1.6%
Lafayette	$ 323.8	193.2	118.6	76.9	45.4	284.6	157.7	109.8	82.3	53.5
	P 3.3%	2.9%	2.6%	2.0%	1.6%	4.0%	3.3%	3.2%	2.8%	2.3%
St. Landry	$ 85.0	52.1	46.1	41.8	32.6	131.6	106.2	63.0	51.3	48.3
	P 0.9%	0.8%	1.0%	1.1%	1.1%	1.8%	2.2%	1.9%	1.7%	2.1%
St. Martin	$ 44.6	30.1	3.2	3.0	1.6	36.1	19.1	15.4	12.6	10.8
	P 0.5%	0.4%	0.1%	0.1%	0.1%	0.5%	0.4%	0.5%	0.4%	0.5%
St. Mary	$ 127.2	67.7	46.9	28.7	14.7	109.0	75.9	47.7	38.3	27.8
	P 1.3%	1.0%	1.0%	0.7%	0.5%	1.5%	1.6%	1.4%	1.3%	1.2%
Vermilion	$ 54.5	37.1	19.2	11.9	12.1	63.6	50.1	37.6	31.7	24.5
	P 0.6%	0.6%	0.4%	0.3%	0.4%	0.9%	1.1%	1.1%	1.1%	1.0%

TABLE 16 (Cont'd)

		Wholesale Trade					Retail Trade				
		1972	1967	1963	1957	1954	1972	1967	1963	1957	1954
Study Area	$	731.5	434.3	248.1	201.8	145.1	736.0	483.4	324.1	261.9	201.4
	P	7.5%	6.5%	5.4%	5.1%	5.0%	10.2%	10.2%	9.6%	8.9%	8.6%
State	$	9,805.8	6,642.9	4,598.2	3,928.3	2,921.6	7,213.8	4,759.5	3,391.2	2,939.3	2,339.3
	P	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0

$-denotes dollar value of trade receipts

P-denotes percent of state receipts

Source: US Department of Commerce, Bureau of Census, Census of Business, Wholesale Trade, Retail Trade, 1972, 1967, 1963, 1957, 1954.

TABLE 17

PER CAPITA INCOME FOR THE STUDY AREA, 1960-1970 (IN CURRENT DOLLARS)

Parish	1960	% of State Average	1970	% of state average
Iberia	1,286	119	3,240	87
Lafayette	1,275	116	3,162	87
St. Landry	975	75	2,037	66
St. Martin	950	79	2,141	64
St. Mary	1,260	120	3,268	85
Vermilion	1,106	81	2,206	75
Study Area Average	1,142	98	2,676	73
State Average	1,474	100	2,721	100

Source: Sales Management Annual 1961; 1971

in the study area was growing more rapidly than the population in the study area, when both figures were compared to statewide changes.

(1) <u>Agriculture.</u> Table 14 indicates that as a percentage of the value of all agricultural production in Louisiana, the share originating in the study area was unchanged from 1959 to 1969 and represented approximately 15% of the statewide total.

(c) Land use. The following presents the 1974 use of land in the six parishes of Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion. It includes an inventory survey with a brief analysis of each use, and records the general development of each parish at one point in time. Such a record is important in that it serves to indicate probable future trends. Table 18 includes acreage breakdowns for all of the land use categories included in the year 1967.

(1) Agricultural. In 1974, 1,124,858 acres, or 37.4 percent of the study area were used in some form of agricultural endeavor. The two leading parishes with agricultural acreages were Vermilion (392,395) and St. Landry (297,729). The major harvested crop was rice. Other important crops included sugarcane, soybean, cotton, and corn. The most significant crop expansion continues to be soybean production and reflects the most important trend in recent years.

(2) Industrial. Industrial land use in 1974 in the project area involved only 10,757 acres or 0.4% of the total land area in these parishes. Industrial land use is concentrated in and around the urban centers of the region, near Lafayette, New Iberia, Opelousas, Morgan City, Abbeville, Franklin, etc. Some industrial parks are developing outside the larger cities and focus their location on major arterial highways, waterways, air transport centers, and railroads. Much of the acreage mentioned above is associated with the industrial complexes of the petroleum industry. Continuous expansion of this land use category is expected for the next twenty years, especially in industrial parks. Land conversions to a higher use will probably occur due to continued industrial growth.

(3) Urban. Urban land use in this study includes land used for residential, commercial, and public purposes. Within the study area approximately 84,422 acres were utilized in 1974 for urban purposes. A large portion of the urban land is found along the banks of Bayou Teche and Vermilion River, since many of the larger towns and cities are located on these two waterways, including Lafayette, Abbeville, New Iberia, Jeanerette, Franklin, Morgan City, Breaux Bridge, St. Martinville, Arnaudville, Leonville, etc. Population growth is expected for the cities of Lafayette, New Iberia, and Morgan City for the next twenty-five years. Thus, it is anticipated that more land area will go into the urban land

TABLE 18

LAND USE ACREAGES OF PARISHES OF THE PROJECT AREA, 1974

Parish	Total Land Area	Water Area	Marsh	Forest	Agriculture	Urban	Industrial	Trans.
Iberia	414,080	49,050	115,164	22,006	103,892	22,613	438	4,805
Lafayette	181,120	833	----	48	137,198	10,546	141	5,372
St. Landry	598,400	15,500	584	174,262	297,729	25,275	5,011	11,301
St. Martin	514,560	60,857	3,102	282,562	96,027	5,911	235	4,282
St. Mary	453,760	87,147	172,308	143,755	97,717	6,882	1,282	3,549
Vermilion	844,800	79,927	402,807	34,200	392,295	13,195	3,650	8,214
Study Area	3,006,720	293,314	693,965	656,833	1,124,858	84,422	10,757	37,523
State	31,054,720	2,709,562	3,686,320	16,036,500	7,445,100	377,705	n/a	469,481

Source: ALPCL, 1967, Louisiana Department of Public Works, 1967, Acadiana Planning and Development District, 1974

use category as cities and towns continue to expand with urban sprawl. Much of the land will be extracted from the surrounding agricultural and marsh lands existing along the two major rivers in the study area.

(4) Transportation. The main purpose of a transportation system is to move people and goods with the least amount of friction. It is a "must" that enables towns and cities to earn their living, and it is a powerful factor for shaping growth in realizing the full potential of all usable land. It should be noted here that a transportation system does not start in one parish and end at that parish's boundaries. Transportation is a highly complicated and vast network and can only be effectual if it relates to all surrounding areas. Thus, for the purpose of this study highway acreages for the parishes of Acadia and Evangeline are included since data **available included** all eight parishes in one figure.

(a) Highways. The thoroughfare circulation system in the study area is the most used type of travelway. The current network of roads in the six parish area is extensive enough, but not always adequate, due to poor quality. In **1974**, this region had 41,581 acres of land included in highways. It is assumed that since that time this acreage has increased due to new construction of highways, especially Interstate 10 which runs through the northern tier of parishes of the study area.

(b) Railroads. There are no available data on the total acreage for railroad use in the six-parish area. However, in 1967, Louisiana had a total of 76,000 acres of land used in railroad transportation. It is assumed that the study area has a moderate percentage of this acreage figure. All of the parishes are served by railroads, but railroad transportation in this area does not play as significant a role as other transport systems at the present time. The only railroad offering passenger service within the study area is Amtrak, and the only railroad company providing freight transport services is the **Southern Pacific, Missouri Pacific, and Texas Pacific Railroad.** Southern **Pacific has freight terminals in Lafayette, New Iberia, Franklin,** Morgan City, **Baldwin, Jeanerette, Broussard, and Opelousas and its rail network serves all of the parishes in this study region.**

(c) Pipelines. In Louisiana a transportation system which is second only to the thoroughfare system in total mileage is the pipeline system designed to transport oil and gas. However, due to the inadequacy of the information available, it was impossible to obtain the data pertaining to the amount used by pipelines. It should be noted that pipelines are usually underground, therefore leaving the surface available for some other land use category.

(d) Air transportation. Aviation facilities are found throughout the study area. Specifically, there are 7 public airports, 15 private airports, 2 seaports, and 13 heliports in the six parishes. However, due to unavailable data, no information as to the total acreage devoted to this category is included. The Acadiana region (including the six parishes of the study area plus Acadia and Evangeline) had 3,863 acres of land in this use category.

(e) Waterways. Waterways within the six-parish project area are under the jurisdiction of the Coastal System Section of the U.S. Army Corps of Engineers. The main water transport systems include the Atchafalaya River, the Vermilion River, Bayou Teche, and the Intracoastal Waterway. Other waterways include Freshwater Bayou, Six-Mile Lake, Grand Lake and Wax Lake Outlet. Locks are located at Berwick, at Bayou Boeuf, above New Iberia (Keystone Locks) on the Bayou Teche, and west of Intracoastal City of the Intracoastal Canal (Vermilion Locks). Floodgates are located at East Calumet, West Calumet, Charenton, Schooner Bayou, and Freshwater Bayou.

(5) Forested. There is very little land in commercial forests. The total forested acreage in 1967 for the study area was 656,833 acres. Most of the forested areas are found in the Atchafalaya Basin portions of St. Martin, St. Mary, Iberia, and St. Landry parishes.

(6) Marshlands. There is an abundance of marshland in the coastal parishes of this project area. Total acreage in 1967 for marshes was 693,965 acres, with most of that figure within Vermilion Parish (402,807 acres). Next were St. Mary (172,308 acres) and Iberia (115,164 acres). Much of the marshland is vulnerable to reclamation at the present time. In the past years, some of the valuable marsh acreage has been lost to agricultural, industrial, and urban uses. The marshland can be delineated as fresh and brackish; saline marshes exists only at the mouth of Freshwater Bayou in the project area. The latter may have existed in the past but due to the increased flow of freshwater from the Atchafalaya these are becoming fresh. Brackish marsh is found along the coastal areas of Vermilion Bay and the Gulf of Mexico and the freshwater marsh is found in Vermilion, Iberia, and St. Mary parishes.

(7) Recreational. Much recreational land is found in this area, but since it is part of the playgrounds and parks located in cities and towns, it was included in the urban category. In St. Martin Parish, Longfellow State Park contains 157 acres and is situated on the banks of Bayou Teche.

(8) State owned, public. Longfellow State Park (mentioned above) and Marsh Island Refuge (79,000 acres) in Iberia Parish are state owned lands in the project area.

(9) Federally owned, public. Shell Keys Refuge is south of Marsh Island Refuge.

d. Developments.

(1) Water resources. The study area has abundant water resources, most of it in surface waters (293,314 acres).

(a) Navigation. A large percentage of the surface water is navigable waterways. Table 19 indicates for the Intracoastal Waterway and the navigable streams in the project area to the number of vessels and total tonnage in 1972 (see also Plate 8). Major types of cargo include bulk oil and related products and clam shell; barge and crew boat traffic are significant.

(b) Reservoirs. There are a number of fresh-water lakes in the study area; most of them are located in the coastal parishes and in the Atchafalaya Basin section of the region. Also, fresh groundwater is available within 250 feet of the surface in most areas of the six parishes involved.

(2) Railways. Southern Pacific, Missouri Pacific, and Texas Pacific Railroads have tracks in the study area. Plate 9 indicates the railway network for the area.

(3) Airports. There are 7 public airports, 15 private airports, 2 seaports and 13 helioports in the project area. The locations of these facilities are found in Plate 10.

(4) Highways. The major highways connecting the parishes of the region are Interstate 10, U. S. 90, U. S. 167, and U. S. 190. There are also a number of state highways. Reference is made here to Plate 11 for the highway network of the study area.

(5) Mineral development. Over the past twenty years there has been increased mineral production in the study area to help meet energy demands. Most of this increased production has come from offshore areas. In 1972 the value of mineral production from this area was $1,282.7 million, or 20% percent of the state total.

(a) Commercial mineral production. Commercial production of petroleum, natural gas, sulfur, and salt is found in the study area. The leading parish in mineral production is St. Mary, with a total mineral production of $524.9 million in 1972. There is an abundance of oil and gas fields in the project area. Other parishes with significant production of mineral resources are Iberia and Vermilion.

(b) Sand and gravel. The sand and gravel

TABLE 19

ANNUAL TOTAL OF VESSELS, ANNUAL TONNAGE
FOR STUDY AREA WATERWAYS, 1972

WATER BODY	TOTAL TONNAGE
Intracoastal Waterway	60,742,405
Freshwater Bayou	514,414
Bayou Teche	615,798
Vermilion River	1,193,367
Franklin Canal	7,569

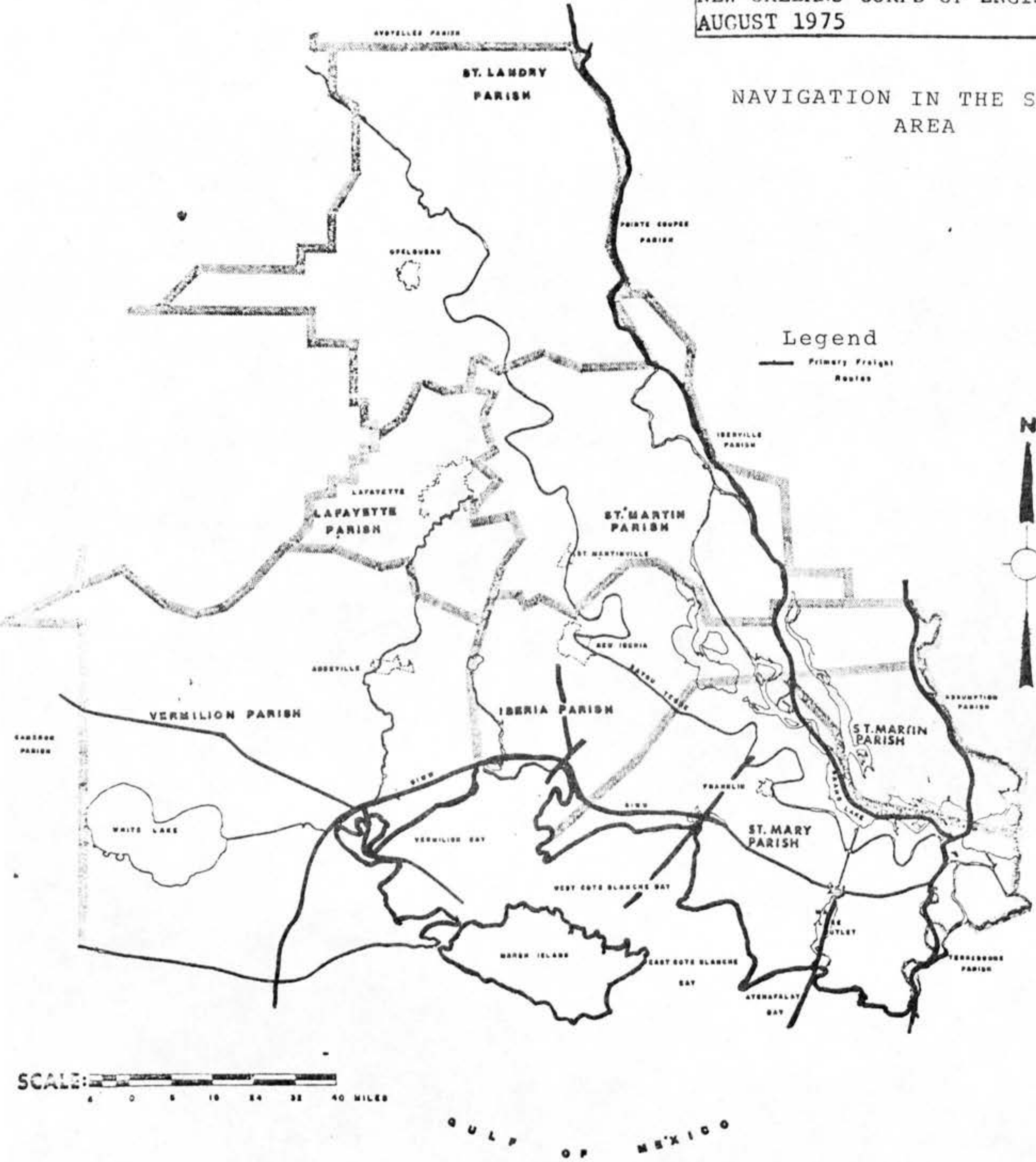
Source: Regional Transportation Inventory, Acadiana Planning and Development District, May, 1974.

PLATE 8
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

NAVIGATION

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

NAVIGATION IN THE STUDY AREA



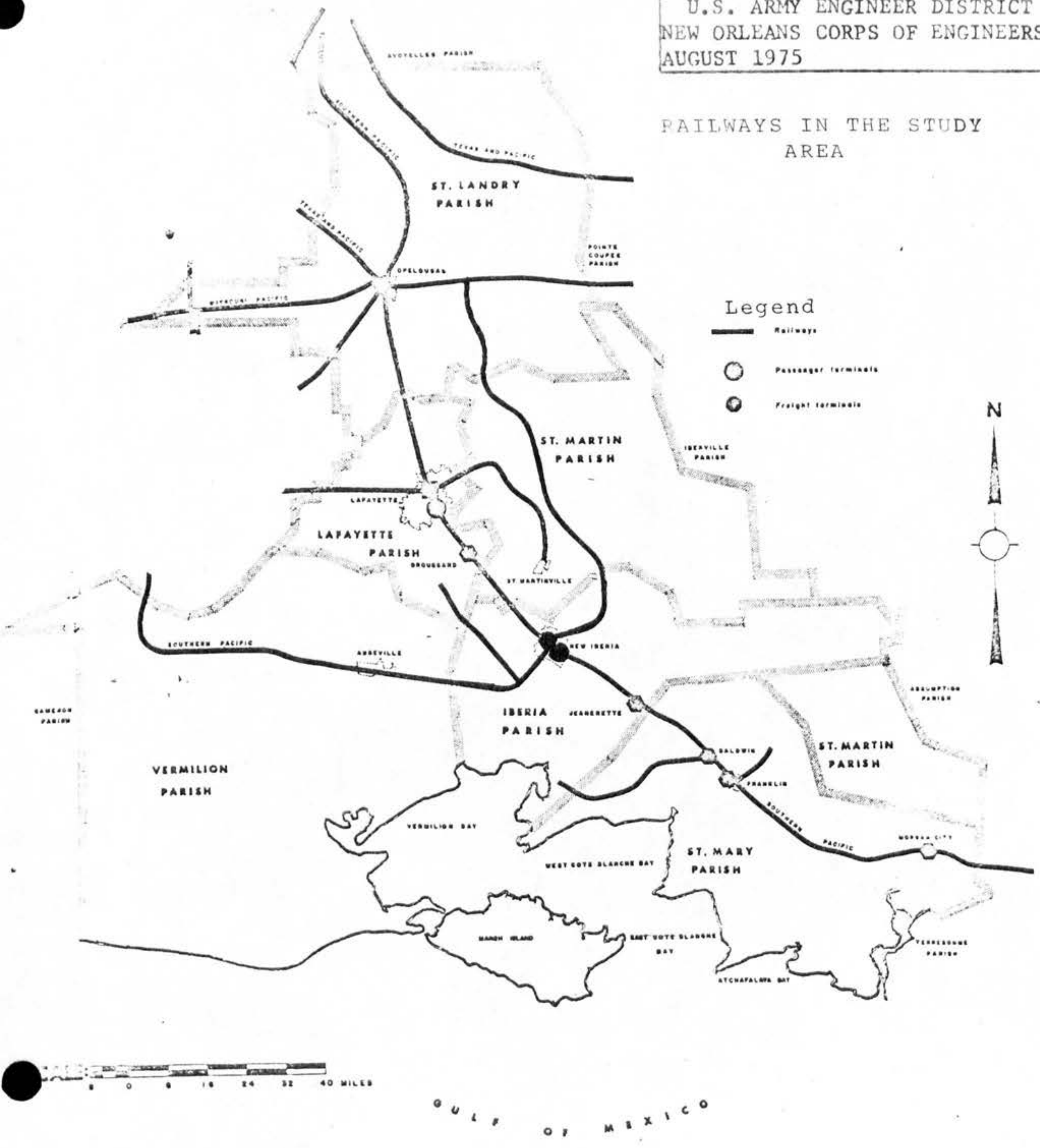
Acadiana Planning and Development District, Regional Transportation.Inventory, May, 1974

PLATE 9
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

RAILWAYS

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

RAILWAYS IN THE STUDY AREA



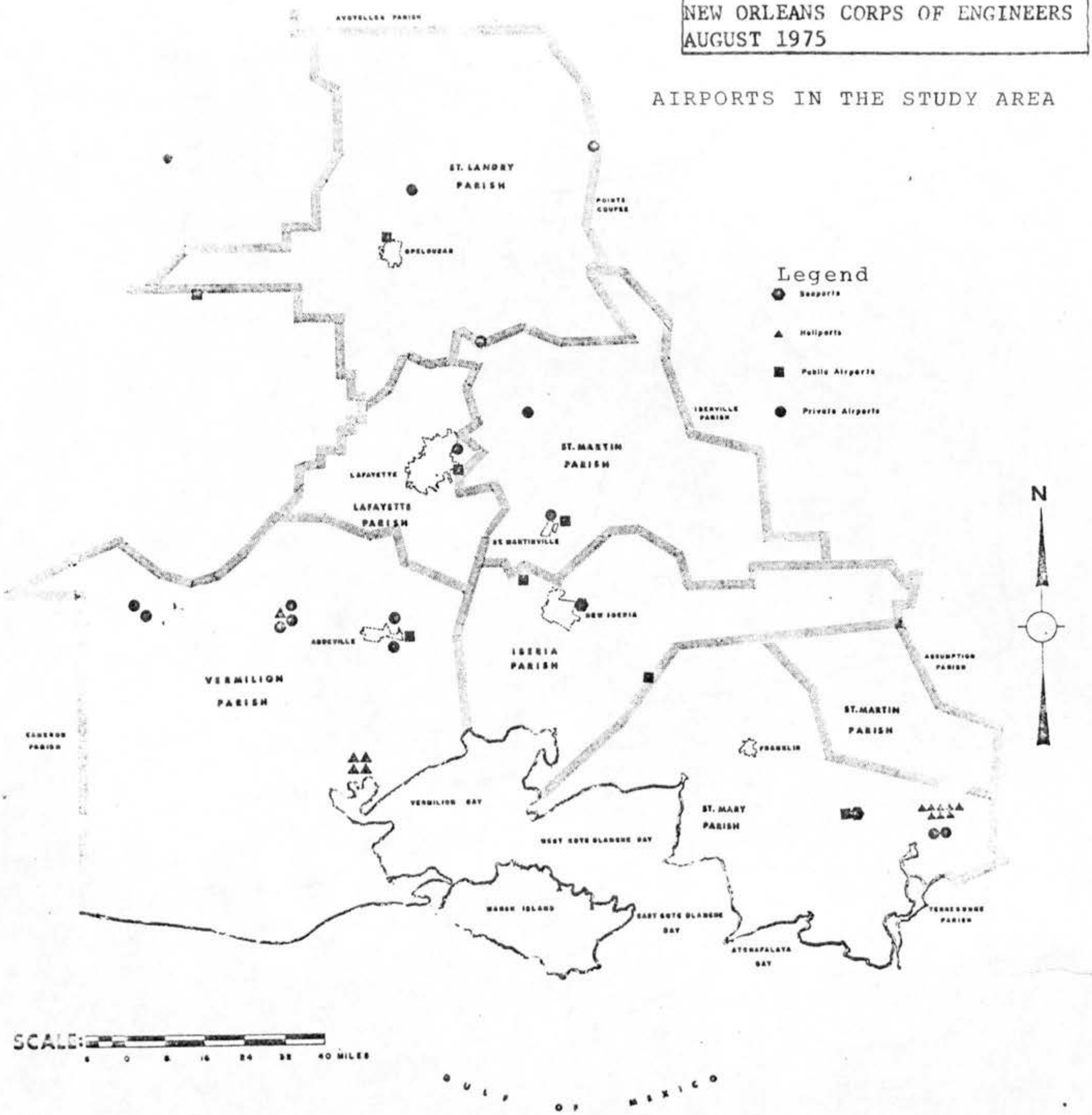
Map after Acadiana Planning and Development District, Regional Transportation Inventory, May, 1974

PLATE 10
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

AIRPORTS

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

AIRPORTS IN THE STUDY AREA



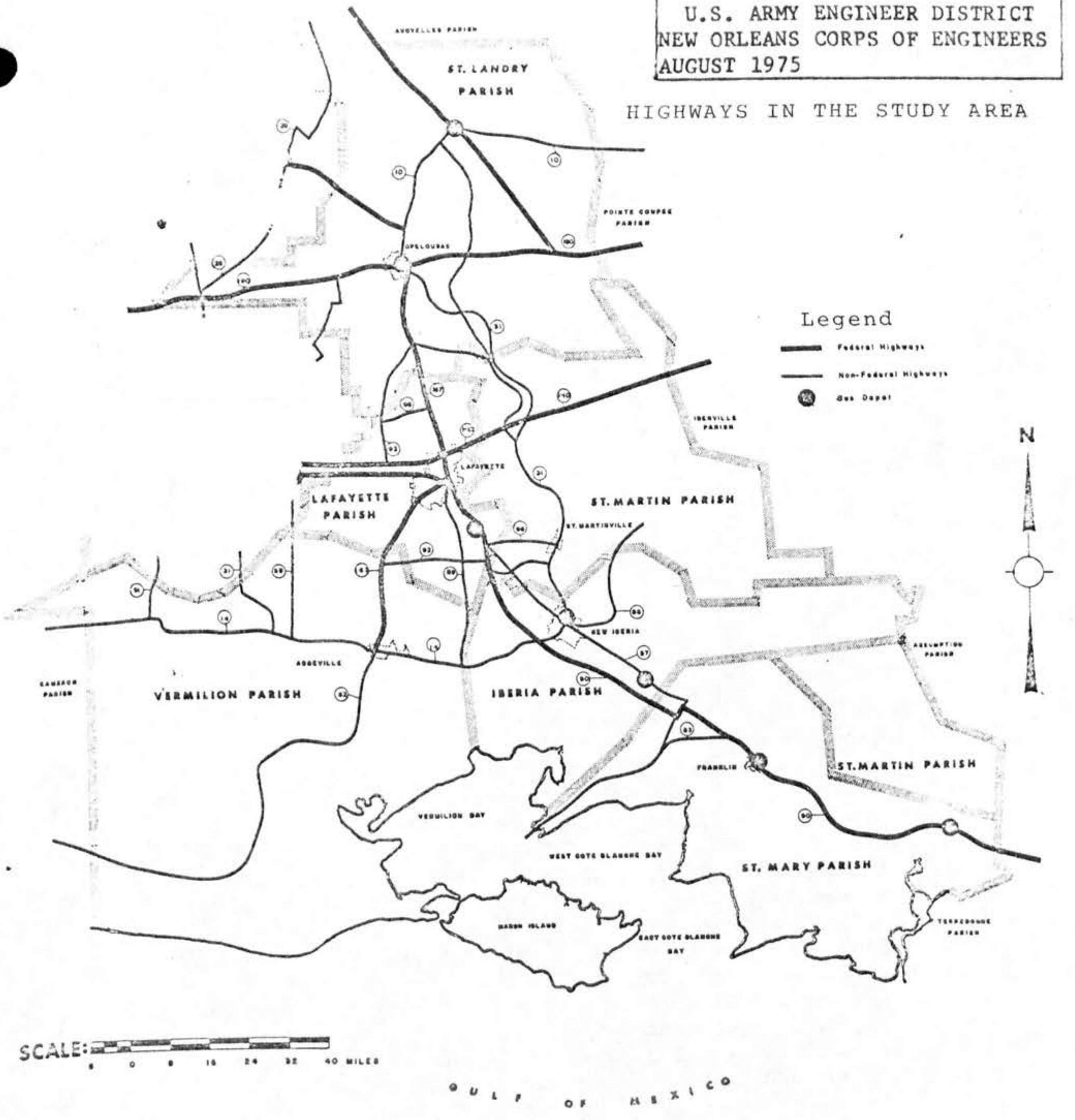
Map after Acadiana Planning and Development District, Regional Transportation Inventory, May, 1974

PLATE 11
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

HIGHWAYS

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

HIGHWAYS IN THE STUDY AREA



Map after Acadiana Planning and Development District, Regional Transportation Inventory, May, 1974

pits in the study area are small and sporadically operated and are not actively productive for more than a few years. These pits are of limited economic significance, with no available annual production data because of their small scale operation.

(c) Salt. Rock salt is mined in the study area and represents a large percent of Louisiana's total production for 1973 which was approximately 13,152,000 short tons valued at $66,211,000. Salt is mined at Cote Blanche Island, Jefferson Island, Anse La Butte, Avery Island, Belle , and Weeks Island.

(6) Power transmission lines. The study area is served by power lines of 115 KV to 500 KV. All of the cities and towns in the six-parish region have electric services A 500 KV line serves the northern portion of the study area. Generating stations and substations are located in Baldwin, Lafayette, and Opelousas.

(7) Oil transmission lines. See Plate 12 .

(8) Gas transmission lines. See Plate 13 .

2.09 MISCELLANEOUS ELEMENTS

There are no national forests or parks in the study area.

2.10 FUTURE ENVIRONMENTAL CONDITIONS OF PROJECT AREA WITHOUT THE PROPOSED PROJECT

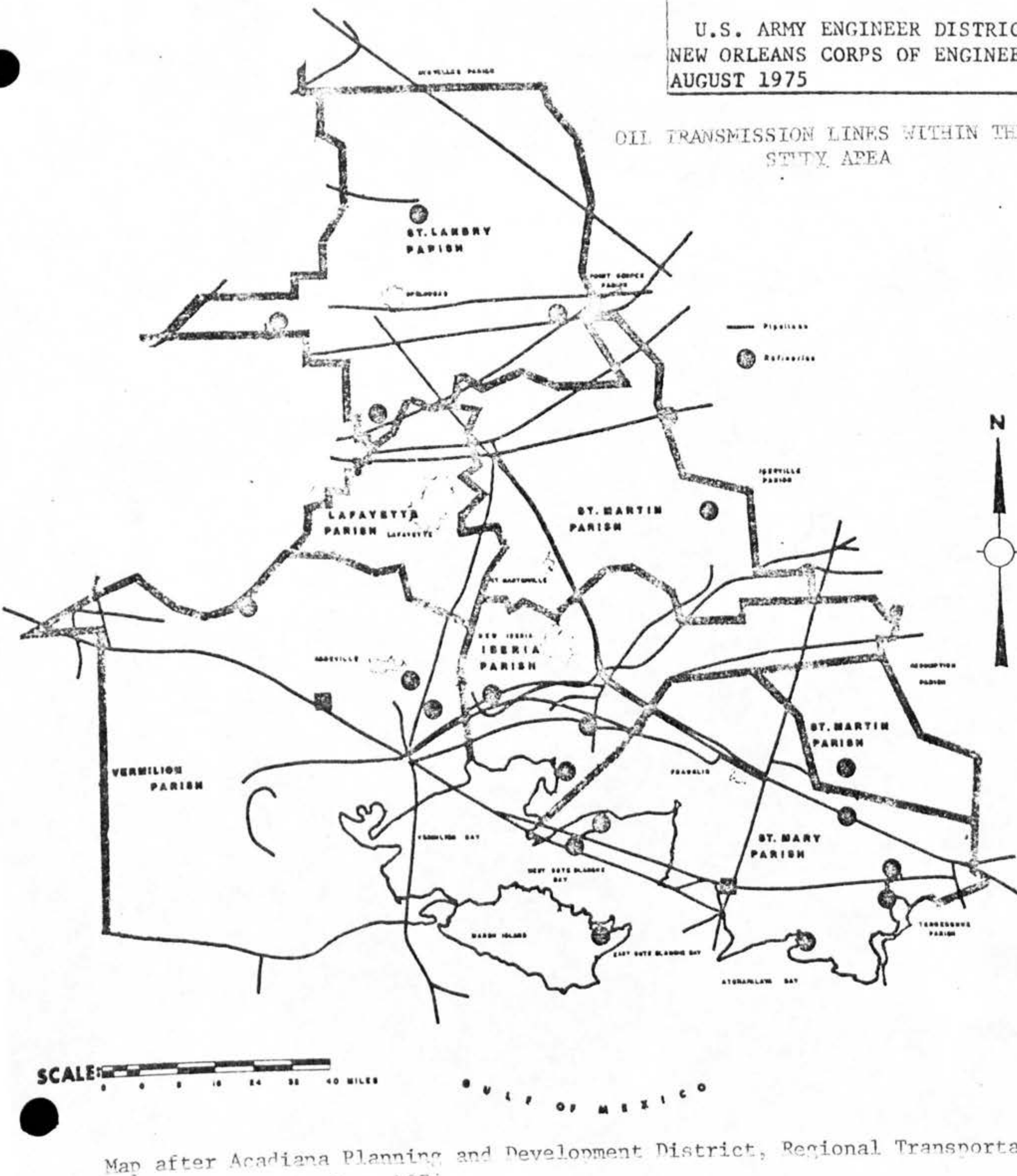
The fauna and flora of the project area should remain substantially the same if the project is not continued. There would be increasing encroachment of the flood plain and marshes into the river basins as these basins continue to accumulate silt. As siltation and collection of debris in the river basins continue navigation would become increasingly impeded and those dependent forms of commerce would suffer financially. However, the Bayou Teche and Vermilion River in their current state are navigable for small boat shipping and would remain navigable as long as these areas are scoured by seasonal flooding. Freshwater Bayou is an unnatural channel subject to active deposition at the lower end and probably would not remain navigable to the Gulf for very long.

PLATE 12
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

OIL TRANSMISSION LINES

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

OIL TRANSMISSION LINES WITHIN THE STUDY AREA



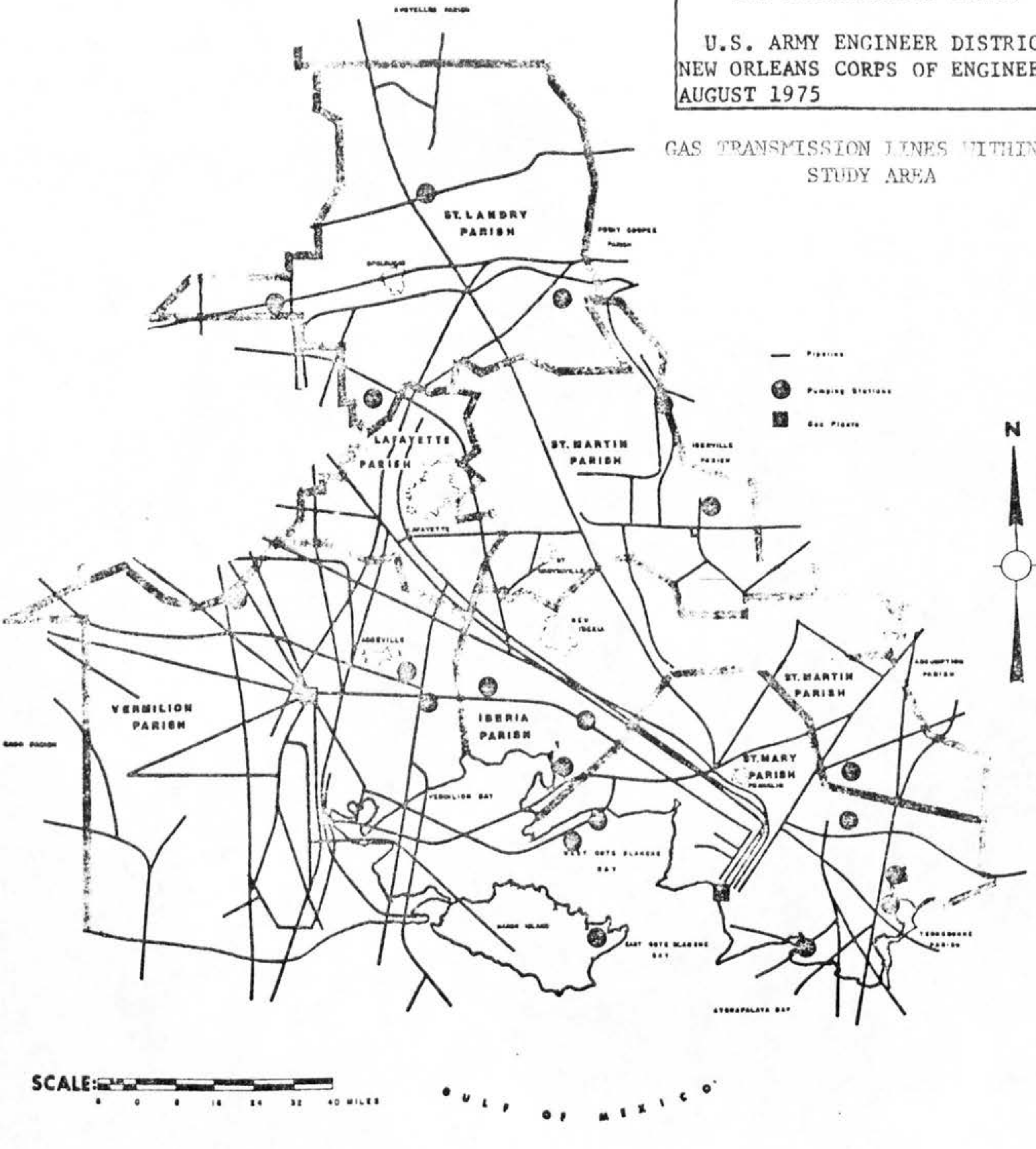
Map after Acadiana Planning and Development District, Regional Transportation Inventory, May, 1974.

PLATE 13
BAYOU TECHE, TECHE-VERMILION,
AND FRESHWATER BAYOU, LOUISIANA

GAS TRANSMISSION LINES

U.S. ARMY ENGINEER DISTRICT
NEW ORLEANS CORPS OF ENGINEERS
AUGUST 1975

GAS TRANSMISSION LINES WITHIN THE
STUDY AREA



Map after Acadiana Planning and Development District, Regional Transportation Inventory, May, 1974.

SECTION 3--RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS

There is no land use plan at present for the study area in question under consideration by any state, regional, or local agency. Thus the proposed action would not violate any proposed land use plan and conforms to any proposed federal, state, and local land use restrictions.

SECTION 4 - THE PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

4.01 NATURE OF IMPACTS

Dredging would be done in the waterways and the material placed along the banks. The dredging would be accomplished with bucket and/or hydraulic cutterhead dredge where disposal sites are continuous and close to the bank. Where sites are not continuous and not close to the bank, only the hydraulic cutterhead dredge would be used. Along the Vermilion River about 463.70 acres of upland forests, about 1212.40 acres of open non-wooded acres, about 294.60 acres of fresh and intermediate marsh, and about 625.50 acres of bottomland woods have been designated for deposition of dredged material. Along Bayou Teche the acres for disposal occur between the Calumet floodgates and Luckland Plantation and deposition would be within the river in the shallow water between the main channel and the floodplain forest; 621.6 acres are to be used for deposition. Along Freshwater Bayou Navigation Canal 5195.0 acres of marshland (freshwater, intermediate, brackish, and saline) have been designated for disposal. Acreages that are identified herein above or elsewhere are generally appropriate, however they can be expected to vary to meet actual needs for disposal and actual areas available under easements in effect at the time maintenance is performed. On the upland wooded acres of the Vermilion River trees and other flora would be destroyed by disposal. The relatively immobile fauna would be partially or completely destroyed by smothering and recovery rate would be determined by the recovery rate of the original forest. The open areas are used primarily for pasture and would suffer temporary disuse until the dredged material could be spread and grass reestablished. The low lying pasture land would be benefited by the elevation gained. The marsh areas would be adversely effected by the increased elevation acquired by disposal. Adjacent to the waterways of the Vermilion River, banks of dredged material from past dredging would be used for disposal. Along Freshwater Bayou Navigation Canal dredged material deposits in the form of continuous levees are along both banks from GIWW (mile 19.85) to the Gulf of Mexico (mile 0.0). These banks would be used for disposal where bucket dredging would be done; however, in areas where hydraulic dredging would be done, further loss of marsh might result. At present the particular areas to be hydraulically dredged or bucket dredged are not known, so that the relative effects of each can not be evaluated. Along the east bank of Freshwater Bayou between mile 1.27 and 0.0 the disposal area is completely diked for containment of dredged material and includes approximately 191 acres. This section of FWB is saline during dry seasons when freshwater dilution is least. The sediments which would be dredged retain and concentrate salinity as dredging occurred. This salinity would eventually be leached by rain water but would not revegetate completely until leached of some salinity in the upper mud surface.

Mechanical and chemical destruction of vegetation is accomplished along streambanks from the top of bank down to the water surface. Chemical destruction is accomplished by individual tree injection, basal spraying of trees, and general foliage spraying. The work is done at various stages in the stream to allow for total eradication of broadleaf vegetation while minimizing the amount of chemical spray actually entering the stream. The chemical herbicides used are Amines, Low Volatile Esters, and Invert Emulsions of 2, 4-Dichlorophenoxyacetic Acid. Mechanical destruction,tree injection, and basal spraying of trees restrict the destruction to the individual trees that are being eradicated and have little or no effect upon surrounding areas except for removal of the dead trees. General foliage spraying affects all broadleaf vegetation that comes into contact with the herbicide. The 2, 4-D herbicide, particularly the invert emulsion, is selective and does not kill all vegetation. By removing the broadleaf vegetation, we are eradicating trees and brush that will eventaully grow out into the stream and obstruct its flow are eradicated; or, that may completely block sunlight to the bank itself and denude its grass cover and encourage bank erosion. While it is impossible to completely eliminate the destruction of certain species of beneficial and/or ornamental broadleaf plants that may be growing on the streambanks, it is kept to a minimum by a very careful spray program. Destruction of vegetation by any method is always confined to the project right of way.

4.02 BENEFICIAL AND ADVERSE IMPACTS

a. Beneficial impacts

(1) Land resources. Operation and maintenance work on Bayou Teche, Vermilion River, and Freshwater Bayou would result in improved navigation which would benefit those dependent land resources. Along the Vermilion River about 2395.10 acres of primarily upland areas have been designated for disposal, and elevation of some lowlying acres would permit further development.

(2) Vegetative resources. Increased elevation of low lying land areas would increase the diversity of plant species and encourage eventual development of hardwood forests along the upper Vermilion River and Bayou Teche; along Freshwater Bayou and the lower Vermilion increased elevation could allow development of woody vegetation tolerant of brackish water. Embankments of dredged material would be colonized initially by annual species of plants with relatively low diversity and high productivity (Odum, 1971). These pioneering species, with their dense, vigorous growth would aid in stabilizing the dredged material. Species of plants which are typically found in such situations include ragweeds, goldenrods, grasses, and sedges. Subsequent stages in plant succession on dredged material banks would include an "old field" phase, with broomsedges and a variety of shrubs and sapling trees, and finally hardwood forests in freshwater areas. The trend in such succession is toward long-lived woody

species. Old banks of dredged material along the Vermilion River in the vicinity of Lafayette now support a near-mature hardwood forest, including trees such as hackberry, American elm, winged elm, sweetgum, water oak, and live oak. Where dredged material deposits undergo subsidence as along the lower Vermilion River, Bayou Teche, and Freshwater Bayou, the typical hardwood forest would not have an opportunity to develop. Such deposition areas would be dominated by black willow, wax myrtle, buttonbush, eastern baccharis, and hackberry. A temporary increase in phytoplankton biomass may occur as a result of nutrient release into the water; this increase would occur as a result of the dredging process and from runoff from the deposited material. The large amount of dead wood that would result from the deposition of dredged material on the wooded banks would provide temporary habitats for the wood-decaying fungi.

(3) Wildlife resources. Embankments of dredged material would create higher, drier land in the marsh and swamp areas; this elevation would benefit certain upland species of birds. These embankments within marsh areas would allow invasion by eastern baccharis and similar woody shrubs which would create a greater variety of nesting sites for birds. Such areas would continue to support mammals, but the species composition would shift in favor of those species more characteristic of open grassy or shrub areas. Creation of higher ground in marsh areas would allow colonization of these areas by a more mesic mammalian fauna. In the future such elevated areas might be managed for the benefit of wildlife. Certain primarily dry land herptiles, such as racers and skinks, would be able to utilize these embankments in the marsh, thus increasing the species diversity in the area. Creation of upland sites would also provide additional nesting areas for alligators.

(4) Water resources. The beneficial impact on water resources would be in improved navigation and improved flood control. Deepening of the waterways, in particular Bayou Teche and the Vermilion River could reduce turbidity.

(5) Aquatic resources. The project would increase the volume of water available to aquatic organisms in the main channel. Commercial fishing for blue catfish would not be harmed by dredging (Burnside, 1967) and our brief study showed no significant differences between trawl catches in dredged (Freshwater Bayou) and undredged (Vermilion River) channels (Appendix C).

(6) Air impacts. There would be no foreseeable beneficial impacts on air quality.

(7) Economic resources. The dredging of the rivers would remove obstructions to navigation. It would also facilitate access to shipping points along these waterways presently served by tug and barge traffic.

(8) Recreational resources. The project would assure the continuance of these waterways as a recreation resource and possibly this resource might increase in volume.

b. Adverse impacts

(1) Land resource. An increase in the flow of the river current as a result of restoring the waterways to project dimensions would accelerate the erosion process at a minimal rate on the cut-bank sides of the streams.

(2) Vegetative resources. If the project results in significant long-term changes in mean river and canal levels, a shift in the position of the floodplain forests and lower upland hardwoods along the waterways would result. The section of Bayou Teche between Calumet and Luckland Plantation where dredged material would be placed in shallow water between the main channel and the floodplain forest strip, the communication between the floodplain forest and the water way would be impaired or eliminated. This would result in a progressive change in the composition of the floodplain. It has been shown that in saline habitats placement of dredged material in diked areas is detrimental to a rapid return of the environment to conditions before dredging (Skidaway Institute of Oceanography, 1974). Along the lower Freshwater Bayou (mile 1.27 to 0.0) where dredged material is highly saline and is deposited in diked areas, about 191 acres of nearly sterile, nonproductive salt flats with scant vegetation of very low diversity would be maintained. Until the salt is eliminated by leaching, further significant development of vegetation could not occur. Deposition of dredged material in existing floodplain and upland forest of the Vermilion River would result in destruction of those communities. Creation of banks of dredged material along streams and canals through marshes would reduce the nutrient enrichment of the marshes. Deposition of dredged material on existing marsh would eliminate that portion of the marsh. Additional suspension of sediments during the dredging process might exert only a minor, temporary adverse impact on the structure of the phytoplankton community. The added turbidity might initially decrease the plankton biomass. The elimination of any of the plankton species as a result of the dredging would be unlikely. The dredged material near the banks of the rivers might possibly release deleterious materials into the water. If the pesticides present in sediments of the Vermilion River at the Pinhook Bridge and at the Ruth Canal on Bayou Teche, the mercury and copper at Leonville on the Bayou Teche, or oxygen consuming materials are leached into the water, changes in the plankton would occur and in time would modify the primary consumer trophic level.

(3) Wildlife resources. The loss of about 294.60 acres of marsh, c. 625.50 acres of swamp, and about 403.70 acres of upland forest would have a minor adverse impact on the bird species diversity. The habitats that are to be altered would continue to support birds but, in general, different species. Typical marsh and swamp species would be replaced by species of drier areas. The present species of birds would be driven into adjacent areas as the habitats are altered or would perish due to decreased habitat availability. Mammals that cannot escape the dredged material would be lost. Subterranean forms such as moles and low mobility species, such as shrews and mice, would be especially

vulnerable. Along the Vermilion River and Bayou Teche between Calumet and the Luckland Plantation, where bottomland hardwoods often constitute only a narrow habitat zone between the waterways and agricultural and/or residential development, local populations of some floodplain species might be completely eliminated or displaced by invading terrestrial species in areas affected by disposal of dredged material. Adverse effects on population structure would occur if dredging operations coincided with the young-bearing period during the spring. Toxic metals or chemicals deposited with the dredged material could present a long-term potential threat to terrestrial species. The adverse effect on the herpetofauna would be mainly the loss of habitat to the aquatic and semi-aquatic herptiles. The deposition of dredge material in the more upland areas would result in a destruction of those herptiles which lack sufficient mobility to escape.

(4) Water resources. Dredging action would increase initially the local turbidity of the waterways. The extent and duration of the turbidity would depend on physical characteristics of the area. The quality of dredged material as concerns pesticides and heavy metals is below the standards set by the EPA in most areas sampled. However in three sites sampled the levels of pesticides and/or heavy metals is above EPA standards. These are the Pinhook Bridge, Vermilion River with heavy concentrations of chlordane in the water and DDD, DDE, and DDT in the sediments; Ruth Canal, Bayou Teche with high concentrations of DDD in the sediments and of chlordane in the water; Leonville, Bayou Teche with high mercury and copper concentrations in the suspended solids and sediments.

(5) Aquatic resources. Removal of brush, trees, and other impediments from the streams would reduce habitats, cover, and spawning sites for aquatic organisms. The river bodies of the project area have low diversities of aquatic organisms. Larger channels would move freshwater seaward more rapidly, thereby slightly increasing the salinity extremes near the coast. For example, salinities would become slightly higher, sooner than under present conditions, in the lower Vermilion River and would become lower, sooner in upper Vermilion Bay. The effects on aquatic animals are difficult to predict, but estuarine animals are generally adapted to such changes. These estuarine species also might spread further upstream replacing fresh water animals as salt water intrusion occurs. Freshwater Bayou Navigation Canal is a completed project, therefore dredging would slow natural processes, by removing the large amounts of plant detritus. The effects of removal of plant detritus would have an effect on aquatic animals for the fauna of a mud bottom differs from that of a detrital one. Freshwater Bayou was found to have a bottom fauna with lower diversity and fewer numbers of individuals than the Teche-Vermilion Basin, although there was a substantial number of juvenile estuarine fishes caught in the trawl. It is possible that artificial channels in the marsh support less bottom fauna than do natural areas (Etnier, 1972). Where the waterways are in communication with adjacent marshlands the total diversity of aquatic organisms would be increased. Deposition

of dredged material on the marshlands would greatly decrease the diversity of aquatic organisms where these rivers and marshes communicate. Careful placement of new dredged material on old embankments would minimize this adverse effect on diversity. Maintenance of channels might encourage industrial growth which could degrade water quality. Maintenance of an opening into the Gulf through Freshwater Bayou would allow easier access of salt-water animals to the marshes at the expense of freshwater species. However, the lock retards this process somewhat. In certain areas of the waterways deepening to project depths might cause increased runoff from swamps and marshes which in turn would reduce the water available for many aquatic animals there. Increased velocities resulting from increased channel size would probably cause a small increase in erosion, siltation and turbidity. Compared to other factors, however, the effects of channelization would be small.

(6) Air impacts. An adverse impact on the air would be that of a temporary colonization of dredged material sites by ragweed. The pollen of these plants is wind borne and is known to cause hay fever in some humans. Other impacts would be from operating dredging equipment and from additional recreational and commercial vessel usage of the waterways after improved navigation.

(7) Economic and social impacts. Losses of wildlife and esthetic attributes would tend to impose social impacts. There would be no adverse impact on the economy.

(8) Recreational resources. Increased navigational use of the streams resulting from improved navigation would interfere with boating, fishing, and related recreational activities in waterways affected by the project. Those game and non-game animals associated with marsh and existing forests along the waterways as well as areas subject to drainage would be affected. The south bank of the Bayou Teche between Calumet and Luckland Plantation has many residences with boat docks in the water. The present plan for disposal of the dredged material is to place it in the shallow water between the main channel and flood plain; this would effectively cut off the residents and their docks from the waterway after dredging. The impairment of esthetic attributes would also affect recreational uses.

(9) Archeological resources

Intensive bankline search along the streams in the project area disclosed many archeological sites which stand to be adversely impacted by maintenance projects. The greatest negative impact would occur along the Vermilion River, where at least 20 of the 33 known sites lie on the stream banks or a relatively short distance (less than 30m) from them. These sites include from north to

south: 16SL31, (LSU, SM40), 16SM25, 16SM26, 16SM10, 16SM9, 16SM24, 16SM17, 16LY24, 16LY25, 16LY1, 16LY6, 16LY10, 16LY12, 16LY5, 16VM11, 16VM16, and 16VM15. Many of these sites offer great potential for contributing to the knowledge of the Early Formative transition in the United States. Any bankline excavation at these locations would adversely effect the *in situ* patterning of these sites, and the desposition of dredged material on them would make future archeological investigations prohibitively costly and would have the probable effect of changing the soil chemistry and ecological systems which archeologists must use in interpreting prehistoric remains. Two of the three sites along Bayou Teche would be potentailly affected. No sites were found in the survey of Freshwater Bayou; so unless buried sites turn up during maintenance operations, the adverse impact on possible archeological resources there should be negligible.

(10) Agricultural resources. There would be only temporary suspension of usage on some agricultural land due to the project. Dredged material would be deposited in the rights-of-way easements which include some pastureland on the lower Vermilion. Along the Bayou Teche and Freshwater Bayou Canal no agriculture land will be used for disposal.

(11) Mineral resources. No known mineral resources will be affected by the project work.

(12) Existing developments. No modification of existing structures along Bayou Teche and Vermilion River would be necessary. Paralleling roads along either side of the waterways would not be affected by the disposed dredged material.

c. Remedial, protective and mitigation measures

(1) Pollution abatement. Disposal of dredged material from the streams would be in conformance with Federal, state, and local laws governing the prevention of environmental pollution.

(2) Fish and wildlife. Where feasible dredged materials would be placed on previously disturbed areas rather than on undisturbed marshland. Upland sites would be diked and equipped with spill boxes and adjustable weirs in order to retain dredged material within the retention pond and to minimize turbidity in the effluent. In marsh areas disposal sites are bounded by small restraining dikes; weirs or spill boxes are incorporated into these dikes. Dredging activities would be done during winter periods if possible in order to be least destructive to wildlife reproduction. Deposition of dredged material would offer a great potential for increasing breeding areas along the banks. Any pockets in the deposition area which might trap water

(even for short periods of time) offer ideal breeding areas for mosquitoes and biting midges. In addition the dredged material might serve as a dike to prevent rapid drainage of the area immediately behind it. The combination of abundant organic matter in the dredged material and the lack of natural predators such as fish and other insects might bring about huge mosquito and biting midge populations from small breeding areas. In general dredging would probably cause little or no damage to the insects which normally benefit some of the more desirable species. The disposal embankments however, offer a potential for greatly increasing populations of undesirable species of mosquitoes and biting midges.

(3) Vegetative resources. Disposal would be on sites which were previously used along all waterways. Much of the area to be used for disposal along the Vermilion River is cleared sites at present; of the 2596.2 acres available for disposal, about 1212.40 acres are cleared. Old disposal sites would be used along Freshwater Bayou Navigational Canal and along Bayou Teche where dredging would be done. Disposal would be within the bayou between the main channel and the flood plain forest on Bayou Teche between Calumet and Luckland Plantation.

d. Operations and maintenance dredging projects which are segments of a total system

(1) Inter-relationship of segment with the total project. Most of Bayou Teche except from Keystone Lock and Dam to mile 50 has been dredged once but has not been maintained. Those completed segments include (1) Lower Atchafalaya River (mile 0) to mile 50 . (2) Keystone Lock and Dam (mile 72) to Arnaudville (mile 106.5). During the last dredging of the lower segment (miles 0 to 50) there was a shortage of disposal sites. Consequently, dredging to specified limits was not done along this segment. The forebays of the Calumet floodgates require annual dredging. The segment from the east Calumet Floodgate to Luckland Plantation would be maintenance dredged as required. The remainder of Bayou Teche north of the west Calumet Floodgate to Leonville has no designated disposal sites. The entire project area of the Vermilion River has been dredged previously. The segment from mile 35 to 50 in the central portion of the river approximately from the Woodlawn Bridge to Lafayette is a heavily populated area. The population was attracted to this part of the Vermilion because it was heavily wooded. Freshwater Bayou Navigation Canal is a homogenous artificial waterway with unique project features in the lower segments. These are: 1) dredged material would be disposed in open water from mile 0 to -3.6; 2) the dredged material would be saline and disposed into a 191 acre diked area from mile 1.27 to 0; 3) many natural streams empty into Freshwater Bayou Navigation Canal and these would present a dredging problem to prevent flow of material into them. The upper segments of F.W.B. present no unique features.

(2) Frequency of dredging requirements, volume, methods of dredging. No dredging is planned in the foreseeable future on Bayou Teche from the West Calumet Floodgate to Leonville, La. Annual dredging would be done in the forebays of the East and West Calumet Floodgates and from the Calumet Floodgates to Luckland Plantation. The dredged material would be placed on the adjacent banks. This dredging would be done with a bucket dredge and/or hydraulic dredge and amounts to approximately 15,000 cubic yards per year. From the Calumet Floodgates east to Luckland Plantation dredging in September, 1964 removed 213,000 cubic yards. At present estimates are not available concerning the amount of sediments which would be removed by future dredging. Disposal sites of 622 acres exist for use on Bayou Teche near the work areas described. Dredging on the Vermilion River would be done with a bucket dredge and/or hydraulic dredge. Neither the volume of material to be removed nor the frequency of dredging requirements are known at present. The Freshwater Bayou segment from mile 1.27 to -3.60 was last dredged in September and October of 1974. The next scheduled dredging will be September, 1976 for the segment from mile 1.27 to -3.60 at which time 900,000 cubic yards would be removed. Subsequent dredging would remove one million cubic yards every 18 months beginning in 1978. The segment between mile 2 and 19.8 would be dredged in August, 1980, with the removal of 2 million cubic yards. Subsequently, this segment would be dredged in 1987. A bucket and/or hydraulic dredge would be used from mile 19.85 to mile 0.0 and a cutterhead hydraulic dredge would be used from mile 0.0 to -3.60, the approach channel in the Gulf of Mexico.

(3) Location of disposal areas. Disposal sites available along the Bayou Teche are adjacent to the waterway in the vicinity of the Calumet Floodgates and are in the shallow margins of the waterway between the main channel and the floodplain forest from Calumet to Luckland Plantation. The total acreage (see Table 20) for disposal along Bayou Teche is 621.6. Disposal sites along the Vermilion River are located adjacent to the river or within a short distance of the river and include 2596.20 acres. Disposal areas along Freshwater Bayou are adjacent to the waterway and were used during previous dredging periods. A diked area used for disposal of hydraulically dredged material in the past between 1.27 and 0.0 would be used for this purpose in the future. This site on the east bank includes 191 acres. The total number of acres along F.W.B. designated for disposal is 5195.

(4) Types of vegetation and quality of dredged material. The types of vegetation along Bayou Teche adjacent to the Calumet floodgates include about 34 acres with secondary vegetation primarily of herbaceous plants. These disposal sites are used annually and therefore the vegetation has only a short period in which to develop. In the segment between Calumet and Luckland Plantation the disposal sites have immersed freshwater vegetation such as

TABLE 20

LIST OF DISPOSAL SITES

Approximate Location	Bank[1]	*Acreage
Freshwater Bayou Navigation Canal		
20-17[2]	Left	608.8
20-17	Right	133.1
17-16.5	Left	54.7
17-16	Right	23.1
16.5-0	Left	4061.5
16.5-0	Right	313.8
Bayou Teche		
Downstream from East	Left	8.6
Calumet Floodgate	Right	7.0
Upstream from West	Left	8.6
Calumet Floodgate	Right	9.1
Beginning 1900 feet	Left	327.7
downstream and continuous[3]		
to Luckland Plantation	Right	260.6
Vermilion River		
51-50	Left	21.7
	Left	4.0
	Left	4.0
50-49	Right	2.2 + 0.9=3.1
	Right	8.8
49-48.5	Left	13.2
48-46	Left	16.2
	Left	27.9
46-45	Left	2.2
	Left	4.2
	Right	13.8
45-43.5	Left	20.9
	Right	7 + 1.7
43.5-43	Left	15.6
43-42	Left	14.7

*Acreages listed are generally appropriate, however, they can be expected to vary to meet actual needs for disposal and actual areas available under easements in effect at the time maintenance is performed.

[1] Proceeding downstream

[2] River miles

[3] Continuous except for slips, canals, bayous, and drainage ditches crossing disposal area.

TABLE 20 (continued)

Vermilion River (continued)

42-41	Left	2.7 + 16.5
	Left	10.3
41-40	Left	16.5
40-39	Left	12.5 + 15.1
38.5-38	Right	5.1
38-37	Left	11.8
	Left	6.2 + 6.6
37-35.5	Left	6.6
	Left	4.0
	Left	12.5
	Right	7.7
	Right	12.9
35.5-34	Right	5.1
	Left	8.8
	Left	7.7
34-33	Left	12.9
	Left	24.2
33-32	Right	17.1
31.5-31	Right	7.7
31-30.5	Right	30.7
29-28.5	Right	18.9
28.5-27	Left	3.5
	Left	4.6
	Left	7.4
	Right	11.1
27-26.5	Left	4.1
	Left	4.2
26-23	Right	6.7
	Right	4.5
	Right	4.1
	Right	2.9
	Left	5.3
	Left	4.4
	Left	0.8
	Left	8.1
	Left	3.2
	Left	2.3
23-17	Left	4.6
	Left	5.6
	Left	7.1
	Left	4.5 + 0.7
	Left	9.0
	Left	11.1
	Left	6.1
	Left	19.3
	Right	4.0
	Right	9.8

TABLE 20 (continued)

Vermilion River (continued)

	Right	13.8
	Right	2.8
	Right	11.8
	Right	4.6
	Right	8.7
	Right	12.6
17-3.5 (to GIWW)	Left	26.9
	Left	40.6
	Left	8.7
	Left	6.6
	Left	5.9
	Left	14.9
	Left	24.3
	Left	5.6
	Left	30.3
	Left	348.6
	Left	142.2
	Left	34.0
	Left	16.2
	Left	73.1
	Left	78.5
	Left	39.5
	Right	8.2
	Right	5.4
	Right	6.1
	Right	2.6
	Right	421.9
	Right	69.3
	Right	63.3
	Right	146.0
	Right	31.3
	Right	10.5
	Right	49.8
3.5 to Onion Bayou Jct.	Left	109.2
	Left	14.0
	Right	90.3

longleaf water plantain, water milfoil, southern naiad and pondweed. The emergent aquatic vegetation includes: buttonbush, giant cutgrass, and floating water hyacinth. The flood plain vegetation which might also be covered includes: bald cypress, ash, and tupelogum. Along the Vermilion River about 463.70 disposal acres are vegetated by upland hardwoods dominated by water ash, bitternut and pignut hickory, pecan, live oak, shumard red oak, cherry bark oak and cow oak. Approximately 1071.30 acres are cleared areas and are dominated by herbaceous vegetation primarily of grasses and sedges. Approximately 625.50 acres along the Vermilion River are bottomland habitats dominated by flood plain trees such as: bald cypress, hackberry, American and winged elm, and bitter pecan. Along the lower Vermilion River disposal sites are designated for about 294.60 acres of intermediate to brackish marsh. Freshwater Bayou Canal disposal sites are in areas which were previously used for disposal. The sites in the upper F.W.B. are dominated by Chinese tallow tree and Chinaberry; sites through the intermediate and brackish areas are dominated by shrubs such as eastern baccharis and marsh elder; the lowermost reaches of the waterway intergrade from areas dominated by roseau cane to that dominated by vegetation of saline habitats (saltwort, and purslane. The quality of dredge material relative to pesticides and heavy metals is generally below EPA allowable levels, however there are certain areas of these waterways which have concentrations of these materials which are above the EPA standards. Those areas where unsafe concentrations of pesticides exist are: 1) at the Pinhook Bridge of the Vermilion River where there are concentrations of chlordane in the water and DDD,DDE, and DDT in the sediment; 2) at the Ruth Canal of Bayou Teche where there is a high concentration of DDD in the sediment and a high concentration of chlordane in the water; 3) the sediments at Leonville in Bayou Teche where there are concentrations of mercury above acceptable EPA standards; 4) in the suspended solids and sediments of Bayou Teche at Leonville where there is a substantial concentration of copper.

SECTION 5--ANY PROBABLE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

5.01 LAND RESOURCES

On the Vermilion River 2596.20 acres would be used for the disposal of dredged material. This includes about 463.70 acres of forested upland, about 625.50 acres of bottomland, about 1212.4 acres of unforested cleared land, and about 294.60 acres of marsh grading from intermediate to brackish. Along Bayou Teche about 34 acres of previously used disposal sites near the Calumet Floodgates would be used and about 588 acres would be placed in the shallow water margin of the river between Calumet and Luckland Plantation. Along Freshwater Bayou 5195 acres which were previously used for disposal of dredged material would again be used. The unavoidable effect would be to elevate the lowlying areas, thereby creating upland habitats and further increasing the elevation of upland sites.

5.02 VEGETATION RESOURCES

The trees of the forested upland and bottomland disposal sites receiving dredged material around their bases would be killed. The total acres of upland and bottomland are about 2133.80, most of which are on the Vermilion River. The open cleared sites with herbaceous vegetation would be elevated and the vegetation destroyed. The previously used disposal areas of F.W.B. would be further elevated and the vegetation destroyed.

5.03 WILDLIFE RESOURCES

The relatively immobile and subterranean forms of wildlife would be destroyed. The mobile wildlife dependent on forested habitats would be replaced by species of unstable, disturbed habitats. Toxic material in the dredged material from the Ruth Canal and Leonville area of Bayou Teche and the Pinhook Bridge area of the Vermilion River could present a long-term hazard to terrestrial mammals.

5.04 WATER RESOURCES

An increase in turbidity cannot be avoided. The placement of dredged material containing concentrations above EPA standards of the heavy metals mercury and copper present in the river sediments at Leonville on Bayou Teche, and pesticides in the sediments of the Vermilion River at the Pinhook Bridge would result in introducing these materials into the terrestrial habitat. The pesticides and heavy metals were discovered at sampling sites, however, concentrations of heavy metals and pesticides above

EPA standard might be present at unsampled sites and therefore be distributed in these waterways to a greater extent than presently known.

5.05 AQUATIC RESOURCES

Loss of bottom habitats would occur where dredging was done. In dredged areas diversity of aquatic organisms would be reduced, though the effect on overall productivity would be small. Most of the productivity is due to phytoplankton and emergent plants in adjacent swamps and marshes. Along Bayou Teche between the east Calumet Floodgate and Luckland Plantation 588.3 acres of shallow water habitat would be used for disposal sites. This would result in loss of aquatic habitat and gain of terrestrial habitat.

5.06 ECONOMIC AND SOCIAL IMPACTS

The work resulting from the project would cause significant aesthetic losses and losses of fish and wildlife habitats which would cause adverse social impact. No significant unavoidable impact to economic resources is anticipated.

5.07 RECREATIONAL LOSSES

Increased navigational use by commercial vessels would interfere with pleasure boating, fishing and related recreational activities in water areas affected by the project.

5.08 ARCHEOLOGICAL RESOURCES

No unavoidable effect on archeological resources would occur as a result of the project.

5.09 AGRICULTURAL RESOURCES

The project would have minor unavoidable effect on certain pasture land on the lower Vermilion River. Dredged material would be placed on this land and would result in temporary disuse until revegetated with pasturage plants.

5.10 MINERAL RESOURCES

No unavoidable effect on mineral resources would occur as a result of the project.

SECTION 6--ALTERNATIVES TO THE PROPOSED ACTION

6.01 STRUCTURAL

a. Unconfined hydraulic dredging. Two options are: (1) to allow unconfined flow over disposal sites and (2) to control placement so that low lying areas would be elevated. Larger areas would be required; therefore a greater impact would result than with other methods. On the other hand dredged material disposal on larger areas would be spread thinly and would result in elevating the land to a lesser extent and therefore would have a greater chance of revegetation by a similar flora. Unconfined hydraulic disposal would have the disadvantage of allowing dredged material to flow into the waterways, creating temporary turbidity which would harm aquatic organisms.

b. Confined hydraulic dredging. By this method material would be placed on land in specifically designated diked areas. Liquids return from disposal areas could be controlled by using weirs (or spill boxes) for clarification of effluent prior to returning to the water. Excavation by hydraulic dredge for the full length of a channel and placing dredged material on land in designated diked areas would cause the smallest increase in turbidity of the four alternatives. The higher ground created would provide cover for upland species and refuge for certain species during periods of flooding or high tides. Loss of marsh flora and fauna would occur as a result of increased elevation above tidal effect. This method of disposal requires a larger area than the cast and stack method. Land would revegetate with species characteristic of high ground. Fishery resources would likely be somewhat reduced because of the loss of nutrients contributed by surrounding land, marsh, or swamps in the form of detritus.

c. Bucket dredging casting and stacking. The cast and stack method would require the smallest amount of land area; therefore, the changes in land use would be less severe. This method would permit some placement of dredged material on existing ridges, thereby reducing the amount to be placed in marsh areas. The existing vegetation on the ridges would be destroyed, but regeneration would soon begin. However, the establishment of a mature forest after destruction would take 50 or more years. Of the four alternate methods discussed, the cast and stack method would, during the revegetation process, be most subject to soil erosion and would thus return sediment to the waterway with concomitant increases in turbidity. In open waters, waves and littoral drift would wash some of the dredged material back into the channel. Providing ring dikes around the dredged material would obviate runoff and erosion of deposited material. This method would be more costly than hydraulic dredging.

d. Complete removal of dredged material. The dredged material could be barged from the dredging site to the Gulf of Mexico for open water disposal or to less sensitive areas of the river. This method would be expensive and the deposition sites would have to be carefully chosen in order to cause the least harm to other resources.

6.02 NON-STRUCTURAL

Non-structural alternatives to the proposes action imply an existing natural mechanism or system which would allow a function similar to the proposed action to occur. Bayou Teche, the Vermilion River, and Freshwater Bayou serve as waterways for navigation and flood control. Maintenance dredging allows the continued functioning of the waterways in these capacities. A non-structural alternative to maintenance dredging for navigation was not determined. Non-structural alternatives to dredging for flood control are floodplain zoning which would exclude development in a flood prone area; floodplain acquisition which would require purchase of the floodplain by a government agency and thereby excluding development; flood insurance which would allow payment for damages to developments in the floodplain after floods; and floodplain warning and evacuation which would provide early warning and evacuation of an area before anticipated flooding.

6.03 NO ACTION

No action would deprive those interests whose cargoes move over these waterways which originate or terminate in marine areas where no land transportation is available. The bulk cargoes for oil and gas production and all of the commercial fisheries traffic depend upon waterways. However, some of the oil and gas cargoes could be moved by pipelines, and some personnel and lighter oilfield equipment could be moved by helicopter. Failure to maintain these channels would result in a decrease in depth and width of channel. A reduction in depth would impair the maneuverability and reduce the headway of tows, recreational, and other vessels. Reduction in depth and consequently in draft of tows results in increased fuel consumption, increased transit time, and consequently increased transportation costs. Reduction in width reduces the area available for maneuvering any watercraft. Without implementation of operation and maintenance on these waterways there would be little change in the natural environment. This alternative would allow FWB to fill in and to eventually become useless for navigation; and on the Teche-Vermilion would not probably interfere with navigation for many years. However no action would allow flooding problems along the waterways of the latter to continue.

6.04 EFFECT ANALYSIS AS REQUIRED BY SECTION 122

The four methods of dredging considered for the operation would all have some effects on the water quality of adjacent surface waters. Of the four methods, the confinement of dredged material in diked areas involves the least impact on water quality. Unfortunately, this method requires the commitment of large areas of land and is hazardous in saline areas (Skidaway Instit. of Oceanog., 1974 . With proper design and monitoring, diked areas

would greatly reduce turbidity and would confine some of the constituents of the dredged material considered to be pollutants by the Environmental Protection Agency (EPA). The cast and stack method would have less effect on water quality than unconfined disposal by hydraulic dredging. Casting and stacking, although it would involve some commitment of land, would require only a fraction of that land area required for the unconfined disposal by hydraulic dredging. If local drainage and circulation patterns are not blocked during the casting and stacking procedures, the long-term effects on water quality would be limited to those associated with erosion and leaching of the banks of newly dredged material. The construction method utilizing unconfined disposal of hydraulically dredged materials would have the greatest short-term effects on water quality. Depending on flow and circulation conditions, these effects would probably be localized in their distribution. Increase in the turbidity and suspended solids and lowering of the dissolved oxygen would be the major short-term effects. Depending on severity, the lowering of dissolved oxygen might affect the aquatic fauna and suspended solids might affect shellfish and bottom organisms in adjacent areas. There are no other known effects.

SECTION 7--THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONGTERM PRODUCTIVITY

7.01 LAND RESOURCES

The implementation of the proposed dredging of the Bayou Teche, Vermilion River, and Freshwater Bayou might provide negligible improvement for land resources immediately by providing more land area. Conversely, the dredging will cause increased and faster runoff which in turn would cause increased salt water intrusion. Consequently, the long-term effect might be harmful to land use and agriculture.

7.02 VEGETATIVE RESOURCES

Many of the wooded areas along the Vermilion River occur on sites which were used for disposal of dredged material during the previous dredging in 1941. Some of these would again be used for deposition. This land would again be reforested after 30-50 years with the same vegetation. Most of the acreage which would be used is of open, unforested land(c.1071.3acres) on the Vermilion River. The unforested areas are of pastureland and land cleared for development. The bottomland swamps along the Vermilion River which are designated as disposal sites (c.625.5 acres) would be destroyed and elevated by the dredged material, and because of the elevation gained would not revegetate with swamp forest species. If the elevation obtained (a factor not known at present) would be sufficient then terrestrial wooded areas would develop. Another possibility is that urban and/or industrial development could occur on the newly elevated sites, eliminating the possibility of development of wooded forests. The aquatic disposal sites designated along the Bayou Teche would be elevated by disposal and eliminated as aquatic habitats. These sites would be recolonized by flood plain vegetation or by upland species depending on the amount of dredged material taken from the main channel (the amount of material to be removed is not known at present). It is possible in the lowlying aquatic and bottomland sites that sufficient subsidence might occur to restore the elevation of these sites to the original elevation before dredging, whereupon the original vegetation could colonize. The amount of subsidence is related to the weight of dredged material in part and at present this is not known.

7.03 WILDLIFE RESOURCES

The long and short-term effect on wildlife would be directly related to the effect of disposal on the vegetation. Those species dependent on the forested uplands and bottomland swamps of the Vermilion River and those dependent on shallow water sites

in Bayou Teche would be eliminated. The less mobile species would be killed directly by covering with dredged material and the species able to escape through better mobility would colonize other habitats. Further reduction in mammalian populations might occur as a consequence of the deposition of sediment and water borne pesticides (particularly chlorinated hydrocarbons) and heavy metals on the terrestrial habitat.

7.04 WATER RESOURCES

Stable conditions for water quality parameters should return at some period of time after completion of the project. Whether or not these stable conditions are the same as before the work depends on such factors as: a. the relative levels of pollutants introduced into a stream by leaching from dredged material; b. whether the project itself might cause permanent alteration of the relative amounts of entrained or transported chemical (including pesticides) and metal concentrations; c. the attainment of planned flood discharge capacity or navigation channel dimensions for a water course would facilitate collection of runoff and cause confinement of eroded soils; d. the increased availability of navigation channel capacities and consequent greater utilization might result in higher average turbidity levels and increased transference downstream of loose soils and pollutants; e. the increased channel capacity would increase the frequency, duration, and distribution of excessive flows that would normally inundate the downstream marsh and redistribute soils and pollutants.

7.05 AQUATIC RESOURCES

The aquatic habitats of all three waterways would suffer increased short-term turbidity and increased oxygen demand as a result of dead organic matter falling or washing into the waterways. This would cause those aquatic organisms incapable of surviving lower dissolved oxygen and increased turbidity to escape these waterways or be killed.

7.06 AIR IMPACTS

Air impacts should be localized, and short-term, and should not have long-term effects on productivity of the region.

7.07 ECONOMIC AND SOCIAL IMPACTS

There would be definite long term economic and social impacts from project implementation. Increased use of the waterways by barge traffic would insure the continued use of the water transportation system of the area and assure the economic viability of some of the communities situated along these rivers. A

strengthened economy would benefit the social environment directly.

7.08 RECREATIONAL RESOURCES

The project would have an immediate short-term and long-term effect on the area. Increased commercial traffic would adversely affect recreational usage.

7.09 ARCHEOLOGICAL RESOURCES

The changes in people's uses of the environment brought about by the currect project cannot improve the productivity of archeological resources since the resources are nonproductive in the sense of monetary gain. The only potential impact on the archeological resources would be an adverse one. Indirectly, however, proper conservation and exploitation of these resources can lead to consequential benefits. The value and tourist impact on the Atchafalaya Basin interpretive center at any one of several proposed locations would be heightened by the presence of immediately available sites and archeological specimens--some of the sites indeed might even be worked into possible tours if the selected location were confirmed at either the Catahoula or Lake Martin sites. The value of the archeological resources on the Vermilion River could eventually lead to funded recovery programs which could benefit local businesses, local museums, and the State in general. The public educational impact on such programs could not be measured, but the impact on anthropology curricula at several of the State's universities, which have in-field training programs, would be substantial.

7.10 AGRICULTURAL RESOURCES

The short-term effect on agriculture would be that of temporary disuse of pasture land designated for disposal sites. This disuse would continue until the dredged material was dispersed and reseeded with pasture grasses. The long-term effects would be improved transportation of goods to market and improved flood control of lowlying agricultural land.

7.11 MINERAL RESOURCES

The project would improve navigation and as a result would benefit the shipment of these resources on the dredged waterways on a long term basis.

7.12 EXISTING DEVELOPMENTS

There would be no alterations nor modifications to the existing developments in the six-parish area. The impact would be the encouragment of urban and/or industrial development.

SECTION 8--ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

8.01 LAND RESOURCES

There would be an irretrievable loss of bottomland swamp habitat and an irreversible gain of drained land on the Vermilion River.

8.02 VEGETATIVE RESOURCES

There would be an irreversible and irretrievable commitment of c. 625 acres of bottomland swamp along the Vermilion River and c.588 acres of shallow water aquatic plant habitat along the margins of the Bayou Teche between Calumet and the Luckland Plantation.

8.03 WILDLIFE RESOURCES

The wildlife commitments would be brought about by the loss of swamp and upland forested habitats. This could be an irretrievable loss if urban and/or industrial development occurs on the newly elevated and cleared land.

8.04 WATER RESOURCES

The irreversible and irretrievable commitment would be the placing of sediments containing high concentrations of pesticides and heavy metals (copper and mercury) on land. Potentially these pesticides and/or heavy metals could enter the terrestrial food chain.

8.05 AQUATIC RESOURCES

There would be irretrievable and irreversible losses of shallow water aquatic resources along the Bayou Teche between Calumet and Luckland Plantation. This loss would be a consequence of primary productivity of the abundant shallow water rooted aquatic plants which would then affect the aquatic food chain. Fish are certainly a part of this food chain and would be affected as a result of this loss, but also they would be affected by loss of nursery ground in the shallow water.

8.06 RECREATIONAL RESOURCES

There would be no irreversible and irretrievable impact on recreational resources.

8.07 ARCHEOLOGICAL RESOURCES

Unlike biotic systems and natural geological, geomorphic, and pedological growth processes, archeological resources are inert and nonproductive. Natural systems and processes are not stopped or impeded by short-term modifications, although they may be changed or geographically displaced. Archeological resources, which are disturbed by modern man's uses of the environment, are forever lost as a surviving timepackage within the contemporary environment. No more archeological sites of extinct cultures would be generated. Our commitment to these delicately in-balance resources is one of information retrieval and preservation. Failure to do so would have several far-reaching impacts. The loss of even one site removes significant data on which our ultimate understanding of culture depends. The greatest potential benefit of archeology is the perspective it generates on the human race's long term interaction with social and natural environments. Only archeology is capable of providing the time depth essential to comprehending cultural evolution; only archeology can provide understanding on the pristine and unfettered genesis, development, and transformation of the cultural forms which are basic to human survival on this planet. Without this basic information, our entire perception of contemporary and future cultural development is virtually groundless.

8.08 AGRICULTURAL RESOURCES

There would be no irreversible and irretrievable commitments of any of the agricultural resources if the proposed project is implemented.

8.09 MINERAL RESOURCES

There would be no irreversible and irretrievable commitments of any of the mineral resources if the proposed project is implemented.

8.10 EXISTING DEVELOPMENTS

There would be no irreversible and irretrievable commitments of any of the existing developments if the proposed project is implemented. There would be a commitment of land to permanent development.

8.11 HUMAN ELEMENT

There would be irreversible and irretrievable commitments of the human element in labor and time if the project is implemented.

8.12 OTHER ELEMENTS

Fuels and materials would be committed irretrievably in the performance of the project.

SECTION 9 - - COORDINATION AND COMMENT AND RESPONSE

9.01 PUBLIC PARTICIPATION

The last public meetings concerning this project at which the Corps of Engineers was officially represented were held in Lafayette, Louisiana in February 1974. Many of those who attended a Meeting of Local Citizens expressed strong opposition to the proposed dredging. Some of those who were opposed were property owners along the river. On the following day a meeting was held with the Lafayette Police Jury to discuss proposed flood control maintenance dredging between Pinhook Bridge (Mile 50.5) and Woodlawn Bridge (Mile 35.4). An aerial photo mosaic of this reach with superposed areal limits of disposal and notations of the extent of arboreous cover and species involvement was used to delineate the problems. The Juror responsible for obtaining disposal area easements stated that landowners had been advised (at the time of easement signing) that trees would be killed. It was agreed that the affect on private roads within easement areas or private roads within easement areas should also be brought to the attention of the easement grantors. The Lafayette Police Jury favored performance of the work. Some land owners (who had not granted easements for disposal), later in the year, refused to allow Federal surveyors or Police Jury intermediaries on their lands to complete needed surveys. The Vermilion Parish Police Jury expressed opposition to the work proposed between mile 35.4 and 50.5. They felt that it would add to the flood control channels cross-section below Abbeville. Subsequent studies by the Corps of Engineers indicated that the proposed improvement could permit an increase up to a maximum of 0.5 feet in downstream stages. Inasmuch as existing regulations would not admit classification of this maintenance as non-deferable or an emergency work, inadequate funds were available to perform work in both reaches to obviate any possibilities of increased flooding. The proposed work is now in abeyance pending completion of a detailed environmental assessment for the waterway system and availability of sufficient funds for a comprehensive improvement.

9.02 GOVERNMENT AGENCIES

a. Federal agencies. A copy of this draft environmental statement will be furnished those Federal agencies listed in paragraph 5 of the Summary requesting their comments. All relevant and appropriate comments received will be included in the final environmental statement incorporating changes where necessary.

9.03 CITIZEN GROUPS

This draft environmental statement will be mailed to those environmental agencies and groups listed in paragraph 5 of the Summary and will be made available to the public through news releases in the various newspapers. The environmental issues or impacts identified by citizens and conservation groups will be incorporated into the statement where appropriate.

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APPENDIX A

BOTANICAL APPENDIX

Relative abundance or scarcity values assigned to each species in the project area have used the following schematic system: abundant - an important constituent of a community; common - more scattered occurrence; infrequent - here and there; and uncommon - plant rare or very infrequently noted.

The habitat types noted in the appendix refer to the community types in which a species is normally found. Many species may be actually noted in more than one type but are commonly associated with the habitat noted.

Values assigned to each species for importance as wildlife habitat have been extracted mainly from Martin et al. (1961) and Louisiana Conservationist journals. Values have been given on a scale of 3 - important, 2 - moderate, and 1 - poor for both food (F) and cover (C). Abundant marsh species contributing food to fisheries have been assigned values corresponding to detrital production.

Values given to each plant for cultural, esthetic, or scientific purposes have been categorized with the following system for cultural (C) and esthetic or scientific (E or S): 3 - of particular value to man, 2 - of moderate value, and 1 - of no direct value. Recognized values include forestry resources, food products, medicinal sources, esthetical attributes, and species which have been studied from any scientific approach. An asterisk (*) appears next to the species which were seen in the project area.

PHYTOPLANKTON AND ATTACHED ALGAE

UNIT I

Division or Scientific Name	Expected Occurrence In Project Area	Comments	Impact of Project
		Chlorophyta	
Ankistrodesmus *	Common	Throughout year	Temporary turbidity
Aphanochaete repens *	Uncommon	Attached to debris and other algae	Minor habitat alteration
Botryococcus braunii *	Uncommon	Colonial mulliage, surface	Temporary turbidity
Bulbochaete *	Common	Attached to debris	"
Chaetonema irregulare *	Common	Attached to debris and other algae	"
Chlamydomonas *	Common	Throughout year	"
Chlorococcum *	Common	Common in fall	"
Closterium *	Common	Common in fall	Minor habitat alteration
Coelastrum *	Common	Spring and fall	Temporary turbidity
Coelastrum cambricum *	Common	Ouiet water	"

PHYTOPLANKTON AND ATTACHED ALGAE (Cont'd)

Coelastrum microporum *	Common	Quiet water	Temporary turbidity
Cosmarium *	Uncommon	Spring	Minor habitat alteration
Cylindrocystis *	Uncommon	Fall	Temporary turbidity
Desmidium *	Uncommon	Swift water	Minor habitat alteration
Eudorina *	Common	Fresh water only	Temporary turbidity
Genicularia *	Uncommon	Clear water	Moderate habitat alteration
Gonatozygon	Uncommon	Fall	Minor habitat alteration
Gonim pectorale *	Common	Freshwater	Temporary turbidity
Hydrodictyon reticulatum *	Uncommon	Quiet water	
Kirchneriella *	Common	Spring	Temporary turbidity
Mesotaenium *	Common	Freshwater	Minor habitat alteration
Micrasterias *	Common	Freshwater	"
Microspora *	Uncommon	Fall	Temporary turbidity
Microspora amoena *	Common	Quiet water	"
Mougeotia *	Abundant	Also on soil banks	"
Netrium *	Uncommon	Fall	Minor habitat alteration

PHYTOPLANKTON AND ATTACHED ALGAE (Cont'd)

Oedogonium *	Common	Freshwater in mats and attached	Temporary turbidity
Pediastrum	Abundant		"
Pithophora *	Common	Quiet water	"
Protosiphon botryoides *	Common	On soil banks	"
Rhizoclonium *	Common	Spring and attached to debris	"
Scenedesmus *	Rare		"
Selenastrum *	Uncommon		"
Spirogyra *	Common	Intermingled with debris	"
Staurastrum *	Uncommon	Spring	Minor habitat alteration
Stigeoclonium *	Uncommon		Temporary turbidity
Ulothrix *	Abundant	Throughout year	"
Volvox *	Abundant	Freshwater only	Minor habitat alteration
Zygnema *	Common	Quiet water	

Chrysophyta

Amphora *	Uncommon	Spring	Temporary turbidity
Amphora ovalis	Uncommon	Brackish water	"
Anomoenoneis sphaerophora *	Uncommon		"
Asterionella *	Abundant	Cool water	"
Biddulphia laevis *	Uncommon	Brackish water	"
Campylodiscus *	Uncommon		"
Cocconeis *	Uncommon		"
Coscinodiscus *	Abundant	Fresh and brackish water	"
Coscinodiscus rothii *	Uncommon	Freshwater	"
Cyclotella *	Common	Throughout year	"
Cymbella *	Common		"
Diatoma *	Uncommon	Calm water	"
Ditylum brightwelli *	Uncommon	Brackish water	"
Eunotia *	Uncommon		"

Fragillaria *	Abundant	Throughout year, in chains	Temporary turbidity
Frustulia *	Uncommon	Fall	"
Gomphonema *	Uncommon		"
Gyrosigma *	Uncommon		"
Melosira *	Abundant	Fresh and brackish water species	"
Melosira italica *	Uncommon		"
Melosira ambigua *	Common		"
Melosira granulata *	Common	Throughout year	"
Melosira herzogii*	Uncommon	Teche	"
Melosira varians *	Uncommon		"
Navicula *	Abundant	Many species throughout year	"
Nitzschia *	Abundant	Many species-fresh and brackish water	"
Nitzschia paradoxa *	Uncommon	Chains	"
Nitzschia sigmoidea *	Common	Teche	"

PHYTOPLANKTON AND ATTACHED ALGAE (Cont'd)

Pinnularia *	Abundant	Fresh and brackish water	Temporary turbidity
Pleurosigma *	Common		"
Rhizosolenia *	Uncommon	Brackish water	"
Stephanodiscus *	Uncommon	Brackish water	"
Stephanodiscus antzschii *	Common		"
Surirella *	Common		"
Synedra *	Abundant		"
Synura *	Uncommon	Quiet water	"
Tabellaria *	Common		"
Terpsinoe americana *	Common		"
Tribonema *	Uncommon		
		Euglenophyta	
Euglena acus *	Abundant	Throughout year	Temporary turbidity
Euglena deses *	Uncommon	Freshwater	"
Euglena proximi *	Common	Freshwater	"

PHYTOPLANKTON AND ATTACHED ALGAE (Cont'd)

Euglena spirogyra *	Common		Temporary turbidity
Euglena tripteris *	Uncommon		"
Lepoclinclis *	Common	Freshwater	"
Phacus *	Common	Freshwater	"
Phacus longicauda *	Uncommon	Freshwater	"
Phacus orbicularis *	Common		"
Trachelomonas *	Common	Freshwater	"
Trachelomonas gibberosa * (Strombomonas)	Common		"
		Pyrrophyta	
Ceratium hirundinella *	Common	Freshwater	Temporary turbidity
		Cyanophyta	
Anabaena *	Abundant	Fall	Temporary turbidity
Anabaenia azollae *	Abundant	Sprimg-summer	
Anabaena flos-aquae	Abundant		Temporary turbidity

Anabaena spiroides *	Abundant		Temporary turbidity
Aphanocapsa	Uncommon		"
Aphanizomenon flos-aquae*	Abundant		"
Arthrospira *	Uncommon	Spring, Vermilion	"
Chlorobotrys	Uncommon		"
Chroococcus	Uncommon		"
Clindrospermum	Common		
Colteronema	Uncommon		Temporary turbidity
Coelospharium *	Uncommon	Fall and spring	"
Gomphosphaeria *	Uncommon	Spring, Teche & Vermilion	"

Lyngbya *	Common	Freshwater and brackish species	Temporary turbidity
Merismopedia * (Agmenellum)	Common	Freshwater	"
Nostoc	Common	Gelatanous	"
Oscillatoria *	Common	In mats	"
Polycystis	Common	Fall	"
Rivularia	Common	Fall	"
Spirulina subsalsa *	Common		"

FUNGI

UNIT II

Scientific name Common name	Occurrence in project area	Substrate
Agaricus arvensis Horse mushroom	uncommon	soil
Agaricus campestris Field mushroom	infrequent	soil
Aleurodiscus Thelephore	infrequent	wood
Amanita Toadstool	infrequent	soil
Arcyria cinera Slime mold	infrequent	wood and debris
Arcyria denudata Slime mold	infrequent	wood and debris
Arcyria incarnata Slime mold	infrequent	wood and debris
Arcyria insignis Slime mold	infrequent	wood and debris
Arcyria nutans Slime mold	infrequent	wood and debris
Arcyria oerstedtii Slime mold	infrequent	wood and debris
Arcyria occidentalis Slime mold	infrequent	wood and debris
Arcyria versicolor Slime mold	infrequent	wood and debris
Arrhytidia involuta Jelly fungus	uncommon	dead wood
Ascobolus Cup fungus	infrequent	dung
Asterostroma Thelephore	infrequent	wood

Astraeus hygrometricus Earth-star	uncommon	soil
Auricularia auricularia Judas ear	uncommon	frondose wood
Auricularia fuscosuccinea Ear fungus	infrequent	frondose wood
Auricularia polytricha Ear fungus	infrequent	frondose wood
Badhamia gracilis Slime mold	infrequent	wood and debris
Boletus Bolete	infrequent	soil
Bovista pila Puffball	infrequent	soil
Bovistella radicans Puffball	infrequent	soil
Calocera cornea Jelly fungus	infrequent	wood
Cantharellus Chanterelle	infrequent	soil
Calvatia craniformis Puffball	infrequent	soil
Calvatia cyathiformis Puffball	infrequent	soil
Calvatia rubro-flava Puffball	infrequent	soil
Ceratiomyxa fruticulosa Slime mold	infrequent	wood and debris
Cerinomyces crustulinus Jelly fungus	uncommon	wood

Clatharus columnatus Stink horn	infrequent	soil
Clavaria Coral fungus	infrequent	soil, wood
Clitocybe False chanterelle	infrequent	soil
Comatricha longa Slime mold	infrequent	wood and debris
Comatricha lurida Slime mold	infrequent	wood and debris
Comatricha typhoides Slime mold	infrequent	wood and debris
Coprinus Inky cap mushroom	infrequent	dung, soil
Cordyceps Pyrenomycete	infrequent	parasite on insects
Craterium leucocephalum Slime mold	infrequent	wood and debris
Cyathus sterocoreus Bird's nest fungus	uncommon	dung
Cymatoderma Thelephore	infrequent	wood
Dacrymyces deliquescens Jelly fungus	infrequent	wood
Dacrymyces ellisii Jelly fungus	infrequent	wood
Dacrymyces fuscominus Jelly fungus	uncommon	wood
Dacrymyces minor Jelly fungus	uncommon	wood

Dacrymyces nigrescens Jelly fungus	uncommon	wood
Dacrymyces palmatus Jelly fungus	infrequent	wood
Dacrymyces punctiformis Jelly fungus	infrequent	wood
Dacrymyces stillatus Jelly fungus	infrequent	wood
Dacryomitra stipitata Jelly fungus	infrequent	wood
Dacryopinax elegans Jelly fungus	infrequent	wood
Dacryopinax spathularia Jelly fungus	infrequent	wood
Daedalia ambigua Bracket fungus	uncommon	wood
Daedalia quercina Bracket fungus	uncommon	wood
Daldinia Pyrenomycete	uncommon	wood
Diachea leucopodia Slime mold	infrequent	wood and debris
Dictydium cancellatum Slime mold	infrequent	wood and debris
Dicellomyces gloeosporus Jelly fungus	infrequent	parasite of Arundinaria
Dictyophora duplicata Stink-horn	infrequent	soil
Didymium iridis Slime mold	infrequent	wood and debris

Ductifera alba Jelly fungus	uncommon	wood
Eocronartium musicola Jelly fungus	uncommon	parasite on mosses
Enteridium rozeanum Slime mold	infrequent	wood and debris
Exidia compacta Jelly fungus	uncommon	wood
Exidia glandulosa Jelly fungus	common	wood
Exidia hispidula Jelly fungus	uncommon	wood
Exidia nucleata Jelly fungus	infrequent	wood
Exidia recisa Jelly fungus	common	wood
Exidia repanda Jelly fungus	uncommon	wood
Exidia tremelloides Jelly fungus	uncommon	wood
Favolus alveolaris Polypore	infrequent	wood
Favolus brasiliensis Polypore	infrequent	wood
Favolus cucullatus Polypore	uncommon	wood
Favolus rhipidium Polypore	infrequent	wood
Flammula Mushroom	infrequent	wood and soil

Fomes geotropus Shelf fungus	infrequent	wood
Fomes marmoratus Shelf fungus	common	wood
Fuligo septica Slime mold	infrequent	wood and debris
Ganoderma curtisii Polypore	infrequent	wood
Ganoderma lobatum Polypore	infrequent	wood
Ganoderma lucidum Polypore	infrequent	wood
Ganoderma sessile Polypore	uncommon	wood
Geastrum triplex Earth-star	infrequent	soil
Gloeotulasmella pinicola Jelly fungus	uncommon	wood
Gloeotulasmella rogersii Jelly fungus	uncommon	decorticated wood
Helicogloea lagerheimi Jelly fungus	uncommon	parasite on Exidia glandulosa
Helicogloea longispora Jelly fungus	uncommon	wood
Hematrichia abientina Slime mold	infrequent	wood and debris
Hematrichia leiocarpa Slime mold	infrequent	wood and debris
Hematrichia serpula Slime mold	infrequent	wood and debris
Hematrichia stipitata Slime mold	infrequent	wood and debris

<u>Hematrichia</u> <u>vesparium</u> Slime mold	infrequent	wood and debris
<u>Hericium</u> Spiny fungus	infrequent	soil and wood
<u>Heterochaete</u> <u>andina</u> Jelly fungus	uncommon	wood
<u>Heterochaete</u> <u>shearii</u> Slime mold	uncommon	wood
<u>Hexagona</u> <u>variegata</u> Polypore	infrequent	wood
<u>Hydnangium</u> <u>ravenellii</u> Hymenogaster	uncommon	soil
<u>Hydnum</u> <u>repandum</u> Hedgehog mushroom	uncommon	soil and wood
<u>Hymenochaete</u> Thelephore	infrequent	wood
<u>Hypoxylon</u> Hypoxylon	common	wood
<u>Lactarius</u> Milk cap mushroom	infrequent	soil
<u>Lentinus</u> Agaric	infrequent	wood
<u>Lenzites</u> <u>betulina</u> Polypore	infrequent	wood
<u>Lenzites</u> <u>saepiaria</u> Polypore	infrequent	wood
<u>Lenzites</u> <u>striata</u> Polypore	infrequent	wood
<u>Lepiota</u> Parasol mushroom	infrequent	soil

<u>Lindbladia effusa</u> Slime mold	infrequent	wood and debris
<u>Lycogala epidendrum</u> Slime mold	infrequent	wood and debris
<u>Lycogala exiguum</u> Slime mold	infrequent	wood and debris
<u>Lycogala flavofuscum</u> Slime mold	infrequent	wood and debris
<u>Lycoperdon acuminatum</u> Puffball	infrequent	soil
<u>Lycoperdon coloratum</u> Puffball	infrequent	soil
<u>Lycoperdon marginatus</u> Puffball	infrequent	soil
<u>Lycoperdon pedicillatum</u> Puffball	infrequent	soil
<u>Lycoperdon perlatum</u> Puffball	infrequent	soil
<u>Lycoperdon pusillum</u> Puffball	infrequent	soil
<u>Lycoperdon pyriforme</u> Puffball	infrequent	soil
<u>Lycoperdon rimulatum</u> Puffball	infrequent	soil
<u>Marasmius rotula</u> Horsehair toadstool	infrequent	debris
<u>Merulius aureus</u> Polypore	infrequent	wood
<u>Merulius pallens</u> Polypore	infrequent	wood

Merulius incarnatus Polypore	uncommon	wood
Merulius tremellosus Polypore	infrequent	wood
Mutinus curtisii Stink-horn	infrequent	soil
Mutinus ravenellii Stink-horn	infrequent	soil
Mycogloea carnosa Jelly fungus	infrequent	wood
Mylittopsis marmorata Jelly fungus	uncommon	wood
Nidularia pulvinata Bird's nest fungus	uncommon	dung
Octaviania ravenellii Hymenogaster	uncommon	soil
Oligonema flavidum Slime mold	infrequent	wood and debris
Oligonema schweinitzii Slime mold	infrequent	wood and debris
Panus rudis Wood mushroom	infrequent	wood
Panus strigosus Wood mushroom	infrequent	wood
Peniophora Thelephore	infrequent	wood
Perichaena vermicularis Slime mold	infrequent	wood and debris
Peziza Cup fungus	infrequent	soil
Phleogena faginea Jelly fungus	uncommon	decorticated wood

Physarella oblonga Slime mold	infrequent	wood and debris
Physarum bethelii Slime mold	infrequent	wood and debris
Physarum bogoriense Slime mold	infrequent	wood and debris
Physarum cinereum Slime mold	infrequent	wood and debris
Physarum didermoides Slime mold	infrequent	wood and debris
Physarum globuliferum Slime mold	infrequent	wood and debris
Physarum mutabile Slime mold	infrequent	wood and debris
Physarum nutans Slime mold	infrequent	wood and debris
Physarum polycephalum Slime mold	infrequent	wood and debris
Physarum pusillum Slime mold	infrequent	wood and debris
Physarum serpula Slime mold	infrequent	wood and debris
Physarum viride Slime mold	infrequent	wood and debris
Pilobolus Pilobolus	infrequent	dung
Pisolithus tinctorius Earth-ball	uncommon	soil
Platygloea longibasidia Jelly fungus	uncommon	wood

Pleurotus ostreatus Oyster mushroom	infrequent	wood
Pluteus Deer mushroom	infrequent	soil
Polyporus adustus Polypore	common	wood
Polyporus amgdalinus Polypore	infrequent	wood
Polyporus arcularis Polypore	common	wood
Polyporus biennis Polypore	infrequent	wood
Polyporus cinnabarinus Polypore	infrequent	wood
Polyporus conchifer Polypore	infrequent	wood
Polyporus dealbatus Polypore	uncommon	wood
Polyporus dichrous Polypore	infrequent	wood
Polyporus drummondii Polypore	infrequent	wood
Polyporus frondosus Polypore	uncommon	wood
Polyporus fumosus Polypore	infrequent	wood
Polyporus giganteus Polypore	infrequent	wood
Polyporus gilvus Polypore	common	wood
Polyporus hirsutus Polypore	common	wood

Polyporus hydnoides Polypore	common	wood
Polyporus mutabilis Polypore	common	wood
Polyporus paragamenus Polypore	common	wood
Polyporus picipes Polypore	uncommon	wood
Polyporus sanguineus Polypore	common	wood
Polyporus sulphureus Polypore	uncommon	wood
Polyporus tricholoma Polypore	common	wood
Polyporus tulipiferae Polypore	uncommon	wood
Polyporus versicolor Polypore	common	wood
Polyporus virgatus Polypore	infrequent	wood
Polyporus zonalis Polypore	infrequent	wood
Poria Polypore	infrequent	wood
Pseudohydnum gelatinosum Jelly fungus	uncommon	wood
Reticularia lycoperdon Slime mold	infrequent	wood and debris
Rhizopogon rubescens Hymenogaster	uncommon	soil

Russula Mushroom	infrequent	soil
Schizophyllum commune Agaric	common	wood
Scleroderma aurantium Earth-star	uncommon	soil
Scleroderma bovista Earth-star	uncommon	soil
Scleroderma flavidum Earth-star	uncommon	soil
Scleroderma geaster Earth-star	uncommon	soil
Scleroderma lycoperdoides Earth-star	uncommon	soil
Sebacina adusta Jelly fungus	infrequent	wood
Sebacina cinera Jelly fungus	uncommon	decorticated wood
Sebacina deminuta Jelly fungus	uncommon	wood
Sebacina dubia Jelly fungus	uncommon	wood
Sebacina epigaea Jelly fungus	uncommon	wood
Sebacina eyrei Jelly fungus	uncommon	wood
Sebacina incrustans Jelly fungus	infrequent	wood
Sebacina plumbescens Jelly fungus	uncommon	wood

Sebacina podlachia Jelly fungus	infrequent	wood
Sebacina variseptata Jelly fungus	uncommon	wood
Septobasidium apiculatum Jelly fungus	uncommon	wood
Septobasidium burtii Jelly fungus	uncommon	wood
Septobasidium castaneum Jelly fungus	uncommon	wood
Septobasidium curtisii Jelly fungus	uncommon	wood
Septobasidium fumigatum Jelly fungus	uncommon	wood
Septobasidium fuscum Jelly fungus	uncommon	wood
Septobasidium langloisii Jelly fungus	uncommon	wood
Septobasidium leprosum Jelly fungus	uncommon	wood
Septobasidium marianii Jelly fungus	uncommon	wood
Septobasidium patourillardii Jelly fungus	uncommon	wood
Septobasidium pilosum Jelly fungus	uncommon	wood
Septobasidium pseudopedicellatum Jelly fungus	uncommon	wood
Septobasidium rugulosum Jelly fungus	uncommon	wood

<u>Septobasidium</u> <u>sabalis</u> Jelly fungus	infrequent	on <u>Sabal</u> <u>minor</u>
<u>Septobasidium</u> <u>sinosum</u> Jelly fungus	uncommon	wood
<u>Septobasidium</u> <u>taxodii</u> Jelly fungus	uncommon	wood
<u>Sirobasidium</u> <u>sanguineum</u> Jelly fungus	uncommon	wood
<u>Sphaerobolus</u> <u>stellatus</u> Bird's nest fungus	uncommon	dung
<u>Steccherinum</u> Tooth fungus	infrequent	wood
<u>Stemonitis</u> <u>axifera</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>confluens</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>fusca</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>hyperopta</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>nigrescens</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>splendens</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>virginiensis</u> Slime mold	infrequent	wood and debris
<u>Stemonitis</u> <u>webberi</u> Slime mold	infrequent	wood and debris
<u>Stereum</u> <u>caperatum</u> Thelephore	infrequent	wood

Stereum gausapabum Thelephore	infrequent	wood
Stereum lobatum Thelephore	infrequent	wood
Stereum ravenellii Thelephore	infrequent	wood
Stropharia Mushroom	infrequent	dung
Stypella minor Jelly fungus	uncommon	wood
Trametes malicola Polypore	uncommon	wood
Trametes rigida Polypore	common	wood
Tremella aurantia Jelly fungus	infrequent	wood
Tremella coalescens Jelly fungus	infrequent	wood
Tremella foliacea Jelly fungus	uncommon	wood
Tremella lutescens Jelly fungus	uncommon	wood
Tremella mesenterica Jelly fungus	uncommon	wood
Tremella moriformis Jelly fungus	uncommon	wood
Tremella mycophaga Jelly fungus	uncommon	parisite on Dacryomitra stipitata
Tremella reticulata Jelly fungus	infrequent	wood

<u>Tremella</u> <u>rufobrunnea</u> Jelly fungus	uncommon	wood
<u>Trichia</u> <u>erecta</u> Slime mold	infrequent	wood and debris
<u>Trichia</u> <u>varia</u> Slime mold	infrequent	wood and debris
<u>Tubifera</u> <u>ferruginosa</u> Slime mold	infrequent	wood and debris
<u>Tulostoma</u> <u>brumale</u> Stalked puffball	uncommon	soil
<u>Xylaria</u> Pyrenomycete	infrequent	soil and wood

MOSSES

UNIT III

Scientific name	Occurrence in project area	Niche	Habitat
Acaulon rufescens	rare	disturbed soil	fields
Amblystegium serpens	infrequent	tree bases, logs	swamps
Amblystegium varium	infrequent	tree bases, logs	swamps
Anacamptodon splachnoides	infrequent	knotholes	upland forest
Anomodon attenuatus *	abundant	tree bases	forests
Anomodon minor	infrequent	tree bases	forests
Anomodon rostratus *	common	tree bases	forests
Astomum ludovicianum	common	disturbed soil	fields
Astomum muhlenbergianum	infrequent	disturbed soil	fields
Atrichum angustatum	rare	dry soil	banks
Atrichum undulatum	abundant	moist soil	forests
Barbula cancellata	common	disturbed soil	roadsides
Brachythecium acuminatum	infrequent	tree bases	upland forest
Brachythecium oxycladon	infrequent	moist soil	banks

MOSSES (Cont'd)

Bruchia carolinae	rare	disturbed soil	fields
Bruchia donnellii	rare	disturbed soil	fields
Bruchia flexuosa	rare	disturbed soil	fields
Bruchia sullivantii	rare	disturbed soil	fields
Bryum argenteum *	common	disturbed soil	fields
Bryum bicolor	infrequent	disturbed soil	fields
Bryum capillare	common	tree bases, logs	swamps
Bryum cuspidatum	infrequent	disturbed soil	fields
Bryum ruderale	infrequent	disturbed soil	cities
Campylium chrysophyllum	infrequent	tree bases, soil	forests
Cirriphyllum illecebrum	common	soil	river banks
Clasmatodon parvulus *	abundant	bark	forests
Climacium americanum *	common	tree bases, logs	swamps
Cryphaea glomerata	infrequent	branches	swamp forest
Cryphaea nervosa	infrequent	branches	swamp forest
Desmatodon plinthobius	rare	rocks, concrete	cities

Dicranella heteromalla	common	soil	roadcuts
Dicranella hilariana	infrequent	soil	roadcuts
Ditrichum pallidum *	abundant	disturbed soil	fields
Entodon macropodus	infrequent	tree bases	forests
Entodon seductrix *	abundant	tree bases	forests
Ephemerum crassinervium	rare	wet soil	floodplains
Ephemerum spinulosum	rare	wet soil	floodplains
Eurhynchium hians	abundant	soil	forests
Eurhynchium pulchellum	rare	soil	forests
Fissidens bryoides	rare	rocks	upland forest
Fissidens bushii	infrequent	soil	banks
Fissidens cristatus	common	tree bases	swamps
Fissidens fontanus	infrequent	tree bases, logs	swamps
Fissidens falcatulus	abundant	soil	forests
Fissidens garberi	rare	logs	forests
Fissidens hallii	infrequent	soil	swamps
Fissidens kegelianus	infrequent	soil	forests

Fissidens kochii	rare	soil	swamps
Fissidens manateensis	infrequent	tree bases, logs	swamps
Fissidens minutulus	rare	rocks	forests
Fissidens neonii	rare	soil	banks
Fissidens pellucidus	rare	soil	forests
Fissidens ravenelii *	abundant	soil	forests
Fissidens reesei *	infrequent	tree bases	swamps
Fissidens subbasilaris	infrequent	tree trunks	forests
Fissidens taxifolius *	abundant	soil	forests
Fissidens viridulus *	infrequent	soil	forests
Fontinalis filiformis	rare	tree bases	swamps
Forsstroemia trichomitria *	abundant	bark	forests
Funaria flavicans *	infrequent	soil	fields
Funaria hygrometrica	infrequent	soil	fields
Funaria serrata	infrequent	soil	fields
Gymnostomum calcareum	rare	calcareous rock	cities
Haplocladium microphyllum *	abundant	logs, soil	swamps

MOSSES (Cont'd)

Hedwigia ciliata	rare	bark	forests
Herpetineuron toccoae	rare	bark	forests
Hypnum lindbergii	rare	soil	swamps
Isopterygium drummondii	infrequent	soil	swamps
Isopterygium micans *	abundant	soil, logs	forests
Leptobryum pyriforme	infrequent	disturbed soil	cities
Leptodictyum riparium	infrequent	soil, humus	swamps
Leptodictyum sipho	infrequent	soil, humus	swamps
Leskea australis *	infrequent	tree bases	swamps
Leskea obscura	infrequent	tree bases	swamps
Leucobryum albidum *	abundant	logs	forests
Leucodon julaceus	abundant	bark	forests
Mnium affine	common	soil	forests
Mnium cuspidatum	rare	soil	forests
Nanomitrium megalosporum *	rare	wet soil	floodplains
Nanomitrium wrightii	rare	wet soil	floodplains

MOSSES (Cont'd)

Orthotrichum pusillum	rare	bark	forests
Papillaria nigrescens	rare	bark	forests
Philonotis longiseta *	abundant	wet soil	forests
Physcomitrium collenchymatum *	infrequent	disturbed soil	fields
Physcomitrion pyriforme	abundant	disturbed soil	fields
Pireella pohlii	infrequent	bark	forests
Platygyrium repens *	infrequent	logs	forests
Pogonatum brachyphyllum	rare	soil	banks
Pogonatum pensylvanicum	rare	soil	banks
Ptychomitrium drummondii *	infrequent	bark, logs	river banks
Ptychomitrium incurvum	rare	rock	cities
Rhynchostegium serrulatum	abundant	soil	forests
Schlotheimia rugifolia	infrequent	bark	forests
Schwetschkeopsis fabronia	infrequent	bark	forests
Sematophyllum adnatum *	abundant	bark, logs	forests
Solmsiella kurzii	rare	bark	forests
Splachnobryum obtusum	rare	calcareous rock	cities

MOSSES (Cont'd)

Syrrhopodon incompletus	infrequent	bark, logs	forests
Syrrhopodon parasiticus	infrequent	bark	swamps
Syrrhopodon texanus	infrequent	logs	forests
Taxiphyllum alternans *	rare	humus	swamps
Taxiphyllum geophilum	infrequent	soil	banks
Taxiphyllum taxirameum	infrequent	soil	banks
Thelia hirtella	infrequent	bark	forests
Thuidium allenii	infrequent	soil	forests
Thuidium delicatulum	common	soil	forests
Thuidium minutulum	infrequent	logs, soil	forests
Tortella humilis	infrequent	tree bases	forests
Tortula rhizophylla *	infrequent	disturbed soil	cities
Trematodon longicollis *	common	disturbed soil	forests
Weissia controversa *	abundant	disturbed soil	fields

From Lemmon, 1966; Reese, 1972; Reese and Thieret, 1966.

LIVERWORTS

UNIT IV

Scientific name	Occurrence in project area	Niche	Habitat
Anthoceros punctatus	infrequent	wet soil	banks
Calypogeia fissa	infrequent	soil	ravines
Dumortiera hirsuta	rare	soil	ravines
Euosmolejeunea duriuscula	infrequent	bark	forests
Frullania eboracensis *	common	bark	forests
Lejeunea flava *	infrequent	tree bases	forests
Leptocolea cardiocarpa	infrequent	bark	forests
Leucolejeunea unciloba	infrequent	bark	forests
Lophocolea heterophylla	infrequent	bark	forests
Microlejeunea laetivirens	infrequent	bark	forests
Odontoschisma prostratum	infrequent	soil	ravines
Pallavicinia lyellii	rare	wet soil	ravines
Plagiochila sp.	infrequent	tree bases	forests
Porella pinnata *	common	tree bases	forests

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LIVERWORTS (Cont'd)

Radula australis	infrequent	bark	forests
Riccia fluitans *	infrequent	water, mud	swamps
Ricciocarpus natans	infrequent	water	swamps
Scapania nemorosa	infrequent	soil	ravines
Sphaerocarpus texanus *	infrequent	disturbed soil	fields

From Reese and Thieret, 1966.

FERNS AND ALLIES

UNIT V

Scientific Name Common Name	Habitat	Abundance	Importance as Wildlife Habitat	Cultural, Esthetic, or Scientific Value
Adiantum capillus-veneris Venus'-hair fern	Banks	Infrequent	F-1 C-1	C-3 E or S-3
Asplenium platyneuron * Ebony spleenwort	Forest	Common	F-1 C-1	C-3 E or S-3
Athyrium filix-foemina Lowland lady fern	Banks	Infrequent	F-1 C-1	C-3 E or S-3
Azolla caroliniana * Mosquito fern	Water	Abundant	F-2 C-2	C-2 E or S-3
Botrychium biternatum Southern grape fern	Forests	Infrequent	F-1 C-1	C-2 E or S-3
Botrychium dissectum Common grape fern	Forests	Infrequent	F-1 C-1	C-2 E or S-3
Ceratopteris deltoidea Floating fern	Water	Infrequent	F-2 C-2	C-2 E or S-3
Diplazium lonchophyllum Lance-leaved glade fern	Ravines	Infrequent	F-1 C-1	C-2 E or S-3

FERNS AND ALLIES (Cont'd)

Diplazium pycnocarpon Narrow-leaved spleenwort	Ravines	Infrequent	F-1 C-1	C-2 E or S-3
Equisetum hyemale Tall horsetail	Ditches	Infrequent	F-1 C-1	C-2 E or S-3
Lorinseria areolata Dwarf chain fern	Wet woods	Infrequent	F-1 C-1	C-2 E or S-3
Lygodium japonicum * Japanese climbing fern	Forest edges	Abundant	F-1 C-2	C-2 E or S-3
Marsilea uncinata Waterclover	Wet open places	Rare	F-1 C-1	C-2 E or S-3
Onoclea sensibilis Sensitive fern	Wet forest	Infrequent	F-1 C-1	C-2 E or S-3
Ophioglossum crotalophoroides Bulbous adder's tongue	Meadows	Infrequent	F-1 C-1	C-2 E or S-3
Ophioglossum engelmanii Limestone adder's tongue	Meadows	Infrequent	F-1 C-1	C-2 E or S-3
Ophioglossum petiolatum Adder's tongue	Wet woods	Infrequent	F-1 C-1	C-2 E or S-3
Osmunda regalis Royal fern	Wet woods, Marshes	Infrequent	F-1 C-2	C-2 E or S-3

Polypodium polypodioides * Resurrection fern	Epiphyte	Abundant	F-1 C-2	C-2 E or S-3
Psilotum nudum Whisk fern	Swamps, banks	Rare	F-1 C-1	C-2 E or S-3
Pteris cretica Cretan fern	Ravines	Rare	F-1 C-1	C-2 E or S-3
Pteris multifida Spider brake	Banks, forest edges	Infrequent	F-1 C-1	C-2 E or S-3
Pteris vittata Ladder brake	Calcareous rock	Rare	F-1 C-1	C-2 E or S-3
Thelypteris kunthei * Southern shield fern	Forest	Abundant	F-1 C-2	C-2 E or S-3
Thelypteris palustris Southern marsh fern	Marsh, swamp	Infrequent	F-1 C-2	C-2 E or S-3
Thelypteris torresiana Shield fern	Wet forest	Infrequent	F-1 C-1	C-2 E or S-3
Woodwardia virginica Virginia chain fern	Wet forest	Infrequent	F-1 C-1	C-2 E or S-3

TREES, SHRUBS AND WOODY VINES

UNIT VI

Scientific Name Common Name	Habitat	Abundance	Importance as Wildlife Habitat	Cultural, Esthetic, or Scientific Value
Acacia farnesiana * Sweet acacia	Cheniers, Dredged Material Banks	Infrequent	F-2 C-1	C-3 E or S-3
Acer nedundo * Boxelder	Frontwoods	Infrequent	F-2 C-3	C-2 E or S-2
Acer rubrum * Red maple	Frontwoods, swamps	Abundant	F-2 C-3	C-3 E or S-3
Aesculus pavia * Red buckeye	Frontwoods	Infrequent	F-1 C-2	C-3 E or S-3
Amorpha fruticosa * Leadplant	Wet forest	Infrequent	F-2 C-2	C-2 E or S-3
Ampelopsis arborea * Peppervine	Frontwoods, swamps	Abundant	F-3 C-3	C-2 E or S-3
Ampelopsis cordata * Heartleaf peppervine	Frontwoods	Abundant	F-2 C-3	C-2 E or S-3
Aralia spinosa * Devil's-Walkingstick	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-3

Asimina triloba * Pawpaw	Frontwoods	Infrequent	F-3 C-2	C-3 E or S-3
Baccharis halimifolia * Eastern baccharis	Marsh ridges, banks	Abundant	F-2 C-3	C-2 E or S-3
Berchemia scandens * Rattan vine	Frontwoods, swamps	Common	F-3 C-2	C-2 E or S-2
Bignonia capreolata * Cross vine	Frontwoods	Common	F-2 C-2	C-3 E or S-3
Borrichia frutescens * Sea-oxeye	Salt and brackish marsh	Common	F-2 C-3	C-2 E or S-2
Brunnichia ovata * Ladies'-ear drops	Frontwoods, swamps	Abundant	F-2 C-3	C-2 E or S-2
Bumelia lanuginosa * Gum bumelia	Frontwoods, cheniers, banks	Infrequent	F-3 C-2	C-2 E or S-2
Callicarpa americana * French Mulberry	Frontwoods	Abundant	F-3 C-2	C-3 E or S-3
Campsis radicans * Trumpet creeper	Frontwoods	Abundant	F-2 C-2	C-3 E or S-3
Carpinus caroliniana * Iron wood	Frontwoods	Common	F-2 C-3	C-2 E or S-2

Carya aquatica * Bitter Pecan	River banks, swamps	Common	F-3 C-3	C-2 E or S-2
Carya cordiformis * Bitternut hickory	Frontwoods	Infrequent	F-3 C-3	C-2 E or S-2
Carya glabra Pignut hickory	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Carya illinoinensis * Pecan	Frontwoods, cultivated	Abundant	F-3 C-3	C-3 E or S-3
Carya X lecontei * Bitter pecan	Frontwoods	Infrequent	F-3 C-2	C-2 E or S-3
Catalpa speciosa * Northern Catalpa	Frontwoods	Infrequent	F-2 C-2	C-3 E or S-3
Celtis laevigata * Hackberry	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Cephalanthus occidentalis * Buttonbush	Swamps	Abundant	F-1 C-3	C-2 E or S-2
Cercis canadensis Redbud	Frontwoods, cultivated	Infrequent	F-2 C-2	C-3 E or S-3
Cinnamomum camphora * Camphor tree	Frontwoods, cultivated	Infrequent	F-2 C-2	C-3 E or S-3

Clematis crispa * Leathervine	Frontwoods, swamps	Infrequent	F-2 C-1	C-2 E or S-2
Clematis virginiana Vrigin's bower	Frontwoods	Infrequent	F-2 C-1	C-2 E or S-2
Cocculus carolinus * Redberried moonseed	Frontwoods, swamps	Abundant	F-2 C-2	C-2 E or S-3
Cornus drummondii * Roughleaf dogwood	Frontwoods, swamps	Abundant	F-3 C-3	C-2 E or S-2
Cornus florida Flowering dogwood	Frontwoods, cultivated	Infrequent	F-2 C-2	C-3 E or S-3
Crataegus viridis * Green hawthorn	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Daubentonia drummondii * Rattlebox	Marsh ridges, banks	Common	F-3 C-3	C-2 E or S-2
Daubentonia punicea Red rattlebox	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Desmanthus illinoensis Prairie mimosa	Roadsides, ridges	Infrequent	F-2 C-1	C-2 E or S-2
Diospyros virginiana * Persimmon	Frontwoods, swamps	Common	F-3 C-2	C-3 E or S-3

Euonymus americanus Strawberry bush	Frontwoods	Rare	F-2 C-1	C- E or S-3
Forestiera acuminata * Swamp privet	Swamps	Abundant	F-2 C-3	C-2 E or S-2
Fraxinus caroliniana Carolina ash	Frontwoods, swamps	Common	F-2 C-3	C-2 E or S-2
Fraxinus pensylvanica Green ash	Frontwoods, swamps	Common	F-2 C-3	C-2 E or S-2
Fraxinus tomentosa * Pumpkin ash	Frontwoods, swamps	Common	F-2 C-3	C-2 E or S-2
Gleditsia aquatica * Water locust	Swamps	Common	F-2 C-2	C-2 E or S-2
Gleditsia triacanthos * Honey locust	Frontwoods, swamps	Common	F-3 C-3	C-3 E or S-3
Glottidium vesicarium Bladderpod	Marsh ridges	Infrequent	F-2 C-2	C-2 E or S-2
Halesia diptera Silverbell	Frontwoods	Infrequent	F-1 C-2	C-3 E or S-3
Hibiscus lasiocarpus Marshmallow	Marsh	Infrequent	F-2 C-2	C-2 E or S-3

Hibiscus militaris Halberd-leaved rose-mallow	Marsh	Infrequent	F-2 C-2	C-2 E or S-3
Ilex cassine * Dahoon	Swamps	Infrequent	F-2 C-2	C-2 E or S-2
Ilex decidua * Deciduous holly	Frontwoods, ridges	Abundant	F-3 C-3	C-3 E or S-3
Ilex opaca American holly	Frontwoods	Infrequentq	F-3 C-3	C-3 E or S-3
Ilex vomitoria * Yaupon	Frontwoods, ridges	Common	F-3 C-3	C-3 E or S-3
Itea virginica * Virginia willow	Swamps	Infrequent	F-2 C-2	C-3 E or S-3
Iva frutescens * Marsh elder	Marsh banks, ridges	Common	F-1 C-3	C-1 E or S-1
Juglans nigra Black walnut	Frontwoods	Rare	F-2 C-2	C-3 E or S-3
Juniperus virginiana * Red cedar	Frontwoods, ridges in marsh	Infrequent	F-3 C-3	C-3 E or S-3
Kosteletskya virginica * Pink Hibiscus	Marsh	Infrequent	F-2 C-2	C-3 E or S-3

Lantana camara Ham and Eggs	Marsh ridges, cheniers	Infrequent	F-2 C-2	C-3 E or S-3
Ligustrum lucidum * Wax-leaved privet	Frontwoods, cultivated	Infrequent	F-3 C-3	C-3 E or S-3
Ligustrum sinensis * Chinese privet	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Ligustrum villosum * Privet	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-2
Lindera benzoin Spice bush	Frontwoods, wet places	Rare	F-3 C-2	C-3 E or S-3
Liquidambar styraciflua * Sweetgum	Frontwoods	Abundant	F-2 C-3	C-3 E or S-3
Liriodendron tulipifera Yellow poplar	Frontwoods	Rare	F-2 C-3	C-3 E or S-3
Lonicera japonica * Japanese Honeysuckle	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Lycium carolinianum * Salt matrimony-vine	Marsh ridges, cheniers	Infrequent	F-3 C-3	C-3 E or S-3
Maclura pomifera * Osage-orange	Frontwoods	Rare	F-2 C-2	C-3 E or S-3

Magnolia grandiflora * Southern magnolia	Frontwoods	Common	F-2 C-3	C-3 E or S-3
Matelea gonocarpa * Matelea	Frontwoods	Common	F-1 C-2	C-3 E or S-3
Melia azedarach * Chinaberry	Frontwoods, marsh ridges	Common	F-1 C-3	C-3 E or S-2
Morus rubra * Red mulberry	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Myrica cerifera * Wax myrtle	Marsh ridges, cheniers	Common	F-3 C-3	C-3 E or S-3
Nyssa aquatica * Tupelo gum	Swamps	Common	F-2 C-3	C-3 E or S-3
Nyssa sylvatica * Black gum	Frontwoods	Infrequent	F-2 C-3	C-2 E or S-2
Parthenocissus quinquefolia * Virginia creeper	Frontwoods	Infrequent	F-3 C-2	C-2 E or S-3
Persea palustris * Swamp redbay	Swamps	Common	F-2 C-3	C-3 E or S-3
Phoradendron serotinum * Mistletoe	Frontwoods	Common	F-3 C-1	C-3 E or S-3

Planera aquatica * Water elm	Swamps	Common	F-2 C-3	C-2 E or S-2
Platanus occidentalis * Sycamore	Frontwoods	Common	F-2 C-3	C-3 E or S-3
Poncirus trifoliata Trifoliate-orange	Frontwoods	Common	F-1 C-3	C-2 E or S-2
Populus deltoides Cottonwood	Frontwoods	Infrequent	F-1 C-3	C-3 E or S-3
Prunus angustifolia* Chickasaw plum	Frontwoods	Rare	F-3 C-2	C-3 E or S-3
Prunus caroliniana Cherry laurel	Frontwoods	Infrequent	F-3 C-3	C-2 E or S-2
Prunus serotina * Black cherry	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Ptelea trifoliata Hop wafer tree	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-2
Quercus X comptonae * Compton oak	Frontwoods	Rare	F-3 C-3	C-3 E or S-3
Quercus lyrata * Overcup oak	Swamps	Common	F-3 C-3	C-2 E or S-3

Quercus michauxii * Cow oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus nigra * Water oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Quercus nuttallii Nuttall oak	Frontwoods	Infrequent	F-3 C-3	C-2 E or S-3
Quercus obtusa * Obtusa oak	Swamps	Infrequent	F-3 C-2	C-1 E or S-2
Quercus pagodaefolia * Cherrybark oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Quercus phellos Willow oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus shumardii * Shumard red oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus virginiana * Live oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Rhamnus caroliniana Indiancherry	Frontwoods	Rare	F-2 C-2	C-2 E or S-3
Rhus copallina * Winged sumac	Frontwoods, marsh ridges	Infrequent	F-3 C-3	C-3 E or S-3

Quercus michauxii * Cow oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus nigra * Water oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Quercus nuttallii Nuttall oak	Frontwoods	Infrequent	F-3 C-3	C-2 E or S-3
Quercus obtusa * Obtusa oak	Swamps	Infrequent	F-3 C-2	C-1 E or S-2
Quercus pagodaefolia * Cherrybark oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Quercus phellos Willow oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus shumardii * Shumard red oak	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Quercus virginiana * Live oak	Frontwoods	Abundant	F-3 C-3	C-3 E or S-3
Rhamnus caroliniana Indiancherry	Frontwoods	Rare	F-2 C-2	C-2 E or S-3
Rhus copallina * Winged sumac	Frontwoods, marsh ridges	Infrequent	F-3 C-3	C-3 E or S-3

Sapium sebiferum * Chinese tallow tree	Frontwoods, marsh ridges	Abundant	F-3 C-3	C-2 E or S-3
Sassafras albidum Sassafras	Frontwoods	Infrequent	F-3 C-2	C-3 E or S-3
Sesbania exaltata * Coffeeweed	Fields, marsh ridges	Common	F-3 C-2	C-2 E or S-2
Smilax bona-nox * Saw Greenbriar	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Smilax glauca * Cat Greenbriar	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Smilax hispida Bristly greenbriar	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Smilax rotundifolia * Common greenbriar	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Smilax smallii * Lanceleaf Greenbriar	Frontwoods	Infrequent	F-3 C-3	C-2 E or S-2
Solanum aculeatissimum * Cockroach berry	Frontwoods, marsh ridges	Infrequent	F-2 C-2	C-2 E or S-2
Solanum pseudo-capsicum * Jerusalem cherry	Frontwoods, marsh ridges	Infrequent	F-2 C-2	C-3 E or S-3

Styrax americana Littleleaf snowbell	Frontwoods	Rare	F-2 C-2	C-3 E or S-3
Taxodium distichum * Baldcypress	Swamps	Abundant	F-2 C-3	C-3 E or S-3
Tilia americana * Basswood	Frontwoods	Rare	F-2 C-2	C-2 E or S-2
Trachelospermum difforme * Climbing dogbane	Frontwoods	Common	F-1 C-1	C-2 E or S-2
Ulmus alata * Winged elm	Frontwoods	Common	F-2 C-3	C-3 E or S-3
Ulmus americanum * American elm	Frontwoods	Common	F-2 C-3	C-3 E or S-3
Ulmus rubra * Slippery elm	Frontwoods	Rare	F-2 C-3	C-3 E or S-3

Vaccinium arboreum * Tree huckleberry	Frontwoods	Rare	F-3 C-3	C-2 E or S-3
Viburnum dentatum * Arrow-wood	Frontwoods	Infrequent	F-3 C-2	C-3 E or S-3
Vitis cinerea * Sweet winter grape	Frontwoods	Common	F-3 C-3	C-2 E or S-2
Vitis rotundifolia * Muscadine	Frontwoods	Common	F-3 C-3	C-3 E or S-3
Wisteria macrostachya * Wild Wisteria	Frontwoods	Infrequent	F-1 C-2	C-3 E or S-3
Zanthoxylum clava-herculis * Prickly-ash	Frontwoods, marsh ridges	Common	F-2 C-3	C-2 E or S-3
Yucca aloifolia Spanish bayonet	Marsh ridges, cheniers	Common	F-2 C-3	C-3 E or S-3

HERBACEOUS SPECIES

UNIT VII

Scientific Nane Common Name	Habitat	Abundance	Importance as Wildlife Habitat (Food and cover value)	Cultural, Esthetic, or Scientific Value
Acalypha rhomboidea * Three-seeded mercury	Roadside, frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Acorus calamus Sweetflag	Freshwater ponds, marsh	Rare	F-2 C-2	C-3 E or S-3
Actinomeris alternifolia Verbesina	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-2
Aeschynomene indica Jointvetch	Freshwater marsh	Infrequent	F-2 C-2	C-2 E or S-2

HERBACEOUS SPECIES (Cont'd)

Agrostis elliottiana Bentgrass	Pastures, Roadsides	Infrequent	F-2 C-1	C-2 E or S-2
Agrostis hyemalis * Ticklegrass	Pastures, roadsides	Common	F-2 C-2	C-2 E or S-2
Agrostis scabra Bentgrass	Fields	Rare	F-2 C-2	C-2 E or S-2
Allium bivalve * False garlic	Frontwoods	Abundant	F-1 C-1	C-2 E or S-3
Allium canadense * Wild onion	Roadside	Abundant	F-1 C-1	C-1 E or S-2
Allium fragrans * False garlic	Roadside	Infrequent	F-1 C-1	C-2 E or S-2
Alopecurus carolinianus * Carolina Foxtail	Roadsides, pastures	Common	F-2 C-1	C-1 E or S-1

Alternanthera philoxeroides * Alligator weed	Ditches, fresh and intermediate marsh	Abundant	F-3 C-3	C-2 E or S-2
Alysicarpus vaginalis Alysicarpus	Roadsides, pastures	Infrequent	F-3 C-2	C-2 E or S-2
Amaranthus palmeri Pigweed	Roadsides, pastures	Infrequent	F-3 C-2	C-1 E or S-1
Amaranthus viridis Pigweed	Roadsides, pastures	Infrequent	F-3 C-2	C-1 E or S-1
Ambrosia artemisiifolia Common ragweed	Roadsides, marsh banks	Common	F-2 C-2	C-1 E or S-1
Ambrosia psilostachya Western ragweed	Roadsides, marsh banks	Common	F-2 C-2	C-1 E or S-1
Ammannia coccinea Ammannia	Ditches	Infrequent	F-2 C-2	C-2 E or S-2
Amsonia tabernaemontana Bluestar	Ditches, meadows	Infrequent	F-1 C-1	C-2 E or S-3
Andropogon elliottii Bluestem	Roadsides	Infrequent	F-1 C-3	C-2 E or S-2
Andropogon gerardii Big bluestem	Roadsides, meadows	Infrequent	F-1 C-3	C-2 E or S-2
Andropogon glomeratus Bushy beardgrass	Roadsides, meadows	Infrequent	F-1 C-3	C-2 E or S-2

Andropogon saccharoides * Silver bluestem	Roadsides	Abundant	F-1 C-2	C-2 E or S-2
Andropogon scoparius Little bluestem	Roadsides, meadows	Infrequent	F-1 C-2	C-2 E or S-2
Andropogon ternarius Splitbeard bluestem	Roadsides	Infrequent	F-1 C-2	C-2 E or S-2
Andropogon virginicus * Broomsedge	Roadsides, pastures	Common	F-2 C-3	C-2 E or S-2
Anthemis cotula Mayweed	Roadsides, pastures	Infrequent	F-1 C-1	C-2 E or S-2
Apios americana Hog peanut	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-2
Apium leptophyllum * Marsh parsley	Ditches	Common	F-1 C-1	C-1 E or S-2
Arisaema dracontium * Green dragon	Frontwoods, swamps	Infrequent	F-2 C-1	C-2 E or S-3
Aristida longespica Long spiked three-awned grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Aristida oligantha Three-awn grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2

Arundinaria gigantea * Giant cane	Frontwoods	Common	F-1 C-3	C-1 E or S-3
Arundo donax Cane	Ditches	Infrequent	F-1 C-3	C-1 E or S-2
Aphanostephus skirrobasis * Lazy daisy	Intermediate marsh banks	Infrequent	F-2 C-2	C-1 E or S-2
Arthraxon hispidus Spear point arthraxon	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Asclepias incarnata Swamp milkweed	Frontwoods, swamps	Infrequent	F-1 C-1	C-2 E or S-2
Asclepias lanceolata Coast milkweed	Frontwoods	Infrequent	F-1 C-1	C-2 E or S-2
Asclepias perennis Milkweed	Swamps	Infrequent	F-1 C-1	C-2 E or S-2
Asclepias rubra Red milkweed	Meadows	Infrequent	F-1 C-1	C-2 E or S-2
Ascyrum hypericoides * St. Andrew's cross	Frontwoods	Common	F-1 C-2	C-2 E or S-2
Aster exilis Saltmarsh aster	Fresh marsh	Infrequent	F-1 C-2	C-1 E or S-2
Aster subulatus Annual saltmarsh aster	Fresh marsh	Infrequent	F-1 C-2	C-1 E or S-2

Aster tenuifolius Perennial saltmarsh aster	Intermediate or brackish marsh	Infrequent	F-1 C-2	E-1 E or S-2
Avena sativa Oats	Roadsides	Infrequent	F-3 C-1	C-3 E or S-3
Axonopus affinis Carpet grass	Roadsides, meadows	Common	F-2 C-1	C-2 E or S-1
Bacopa caroliniana Carolina bacopa	Ditches, marsh	Common	F-2 C-2	C-1 E or S-1
Bacopa monnieri * Water hyssop	Ditches, fresh or intermediate marsh	Common	F-2 C-2	C-1 E or S-1
Bacopa rotundifolia Roundleaf bacopa	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Baptisia lactea False indigo	Roadsides, pastures	Infrequent	F-2 C-1	C-2 E or S-2
Baptisia viridis False indigo	Roadsides, pastures	Infrequent	F-2 C-1	C-2 E or S-2
Bidens bipinnata * Beggarticks	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Bidens discoidea Beggarticks	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Bidens laevis Bur-marigold	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Boehmeria cylindrica * False nettle	Swamps	Infrequent	F-1 C-2	C-1 E or S-1

Boltonia asteroides Marsh boltonia	Frontwoods, marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Boltonia diffusa Smallhead boltonia	Frontwoods, marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Bothriochloa exaristata Beardgrass	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Brachiaria platyphylla * Creeping brachiaria	Ditches, marsh banks	Common	F-2 C-1	C-2 E or S-2
Brasenia schreberi Watershield	Fresh marsh, pools	Infrequent	F-2 C-2	C-2 E or S-2
Briza minor * Quaking grass	Roadsides, pastures	Common	F-2 C-1	C-2 E or S-2
Bromus japonicus Japanese chess	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2
Bromus pubescens Brome grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Bromus racemosus Hairy chess	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Bromus tectorum Downy chess	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Bromus unioloides * Rescue grass	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2

Cabomba caroliniana * Fanwort	Canals, pools, fresh marsh	Common	F-1 C-2	C-2 E or S-2
Callitriche deflexa Water starwort	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Callitriche heterophylla * Water starwort	Pools	Infrequent	F-1 C-1	C-1 E or S-1
Calycocarpum lyonii Cup-seed	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2
Calyptocarpus vialis * Calyptocarpus	Pastures, lawns	Common	F-1 C-1	C-1 E or S-2
Canna flaccida Golden canna	Ditches	Infrequent	F-1 C-2	C-2 E or S-3
Canna glauca Canna	Ditches	Infrequent	F-1 C-2	C-2 E or S-3
Canna indica Indian shot	Ditches	Infrequent	F-1 C-2	C-2 E or S-3
Caperonia palustris Caperonia	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Cardamine bulbosa Bulb bittercress	Ditches, meadows	Infrequent	F-2 C-1	C-2 E or S-2
Cardamine pensylvanica * Pennsylvania bittercress	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-1
Cardiospermum halicacabum * Ballon-vine	Frontwoods	Infrequent	F-1 C-2	C-2 E or S-2

Carex alata * Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex albolutescens Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex blanda Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex cephalophora Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex cherokeensis Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex comosa * Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex crus-corvi * Crow spur	Ditches, swamps	Common	F-3 C-2	C-1 E or S-1
Carex flaccosperma Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex frankii Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex hyalinolepis * Lake sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex leptalea Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex lupulina * Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1

Carex oxylepis Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex reniformis Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex retroflexa Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Carex tribuloides * Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Cassia fasciculata * Partridge pea	Roadsides	Common	F-3 C-2	C-2 E or S-2
Cassia marilandica Senna	Roadsides	Infrequent	F-3 C-2	C-2 E or S-2
Cassia nictitans Senna	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Cassia obtusifolia Sicklepod	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Cassia occidentalis Senna	Roadsides, marsh banks	Infrequent	F-3 C-3	C-2 E or S-2
Cassia tora Senna	Roadsides, marsh banks	Common	F-3 C-3	C-2 E or S-2
Cenchrus echinatus Bur-grass	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1

Cenchrus incertus Bur-grass	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Cenchrus myosuroides Bur-grass	Marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Centella asiatica Spadeleaf	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Centrosema virginianum Butterfly pea	Frontwoods, pastures	Common	F-2 C-2	C-2 E or S-2
Centunculus minimus * Chaffweed	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-1
Cerastium glomeratum Mouse-eared chickweed	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-1
Ceratophyllum demersum * Coontail	Canals, swamps fresh marsh	Common	F-3 C-3	C-2 E or S-2
Chaerophyllum tainturieri * Wild chervil	Ditches	Common	F-2 C-2	C-1 E or S-1
Chenopodium album * Lamb's quarters	Roadsides, marsh banks	Common	F-2 C-2	C-1 E or S-2
Chenopodium ambrosioides Mexican-tea	Roadsides, marsh banks	Infrequent	F-2 C-2	C-1 E or S-1
Chenopodium berlandieri Goosefoot	Roadsides, marsh banks	Common	E-2 C-2	C-1 E or S-1

Cicuta maculata Water hemlock	Ditches	Rare	F-2 C-2	C-1 E or S-3
Cicuta mexicana Mexican water-hemlock	Ditches	Rare	F-2 C-2	C-1 E or S-2
Cirsium horridulum * Spiny thistle	Frontwoods, pastures	Common	F-1 C-2	C-1 E or S-2
Cirsium muticum Swamp-thistle	Frontwoods, swamps	Infrequent	F-1 C-1	C-1 E or S-2
Cladium jamaicense * Sawgrass	Fresh marsh	Infrequent	F-3 C-3	C-2 E or S-3
Clinopodium gracile * Clinopodium	Roadsides, lawns	Abundant	F-1 C-1	C-1 E or S-1
Colocasia esculenta * Elephant's ear	Ditches, river banks, marsh	Common	F-1 C-3	C-1 E or S-2
Commelina diffusa * Spreading dayflower	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-2
Commelina virginica Virginia dayflower	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-2
Convolvulus sepium * Bindweed	Fresh to brackish marsh banks	Common	F-2 C-2	C-1 E or S-3
Corchorus aestuans Jute	Roadsides	Infrequent	F-2 C-2	C-1 E or S-2

Coronopus didymus Wartcress	Roadsides	Common	F-1 C-1	C-1 E or S-1
Corydalis micrantha Golden corydalis	Fields	Infrequent	F-1 C-1	C-1 E or S-2
Crepis japonica * Hawk's beard	Roadsides, lawns	Abundant	F-1 C-1	C-1 E or S-1
Crinum americanum Swamp-lily	Swamps	Infrequent	F-2 C-1	C-3 E or S-3
Crotalaria spectabilis Rattle-pod	Roadsides	Infrequent	F-3 C-2	C-3 E or S-3
Croton capitatus Wooly croton	Roadsides, marsh banks	Infrequent	F-3 C-2	C-1 E or S-2
Croton glandulosus Croton	Roadsides, marsh banks	Infrequent	F-3 C-2	C-1 E or S-2
Cryptotaenia canadensis Honewort	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Cucumis melo Smell melon	Roadsides, marsh banks	Common	F-2 C-1	C-1 E or S-2
Cuphea carthagenensis Waxweed	Ditches	Infrequent	F-1 C-2	C-1 E or S-1
Cuscutta sp. * Dodder	Ditches, marshes	Common	F-2 C-1	C-1 E or S-3
Cynanchum angustifolium Marsh swallow-wort	Marsh	Infrequent	F-1 C-1	C-1 E or S-1

Cynoctonum mitreola Lax hornpod	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Cynoctonum sessilifolium Wand hornpod	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Cynodon dactylon * Bermuda grass	Roadsides, lawns, marsh banks	Abundant	F-2 C-2	C-3 E or S-3
Cynosciadium digitatum * Finger dogshade	Swamps	Common	F-1 C-2	C-1 E or S-1
Cyperus acuminatus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus albomarginatus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus alternifolius Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus aristatus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus articulatus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus brevifolius * Sedge	Ditches, lawns	Common	F-2 C-1	C-1 E or S-1
Cyperus cayennensis Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1

HERBACEOUS SPECIES (Cont'd)

Cyperus compressus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus difformis Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus elegans Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus erythrorhizos Redroot cyperus	Ditches, marsh	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus esculentus * Yellow nut-grass	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Cyperus globulosus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus haspan Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus iria Sedge	Ditches	Common	F-3 C-2	C-1 E or S-1
Cyperus ochraceus Sedge	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Cyperus odoratus Sedge	Ditches, marsh	Common	F-3 C-2	C-1 E or S-1
Cyperus oxylepis Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1

Cyperus polystachyos Sedge	Ditches, marsh	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus pseudovegetus * Sedge	Ditches, marsh	Common	F-3 C-2	C-1 E or S-1
Cyperus retrorsus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus rotundus Nut-grass	Roadsides, ditches	Abundant	F-2 C-1	C-1 E or S-1
Cyperus sesquiflorus Sedge	Ditches	Infrequent	F-3 C-1	C-1 E or S-1
Cyperus strigosus Sedge	Ditches	Common	F-3 C-2	C-1 E or S-1
Cyperus surinamensis Sedge	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Cyperus tenuifolius Sedge	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Cyperus virens Sedge	Ditches, marsh	Common	F-3 C-2	C-1 E or S-1
Dactylis glomerata Orchard grass	Roadsides, pastures	Rare	F-2 C-2	C-3 E or S-3
Dactyloctenium aegyptium Crowfoot grass	Roadsides	Infrequent	F-2 C-1	C-2 E or S-2

Decodon verticillatus Swamp loosestrife	Ditches, swamps	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium canescens Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium ciliare Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium glabellum Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium paniculatum Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium sessilifolium Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Desmodium tortuosum Beggar's ticks	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Dichondra repens * Dichondra	Roadsides, marsh banks	Abundant	F-1 C-1	C-2 E or S-2
Dichromena colorata Whitetop	Ditches, marsh	Infrequent	F-2 C-2	C-1 E or S-3
Dichromena latifolia Sandswamp whitetop	Ditches, marsh	Infrequent	F-2 C-2	C-1 E or S-3
Digitaria adscendens Crab grass	Roadsides	Common	F-3 C-2	C-1 E or S-2

Digitaria ischaemum Crab grass	Roadsides	Common	F-3 C-2	C-1 E or S-2
Digitaria sanguinalis Crab grass	Roadsides	Common	F-3 C-2	C-1 E or S-2
Diodia teres Poor joe	Ditches, pastures, marsh banks	Infrequent	F-2 C-2	C-1 E or S-1
Diodia virginiana * Buttonweed	Ditches, pastures, marsh banks	Abundant	F-2 C-2	C-2 E or S-1
Dioscorea villosa Wild yam	Frontwoods	Infrequentq	F-2 C-2	C-2 E or S-2
Distichlis spicata * Saltgrass	Intermediate to salt marsh	Abundant	F-2 C-3	C-2 E or S-3
Dopatrium junceum Dopatrium	Ponds	Rare	F-2 C-2	C-1 E or S-2
Duchesnea indica * Indian strawberry	Roadsides, Frontwoods	Common	F-2 C-1	C-2 E or S-2
Echinochloa colonum Jungle-rice	Ditches	Common	F-3 C-2	C-1 E or S-2
Echinochloa crusgalli Wild millet	Ditches	Common	F-3 C-3	C-1 E or S-2
Echinochloa walteri Walter's millet	Ditches, marsh	Common	F-3 C-3	C-2 E or S-2

Echinodorus cordifolius Creeping burhead	Ditches, fresh marsh	Common	F-2 C-2	C-1 E or S-2
Eclipta alba Eclipta	Roadsides	Infrequent	F-2 C-2	C-1 E or S-2
Egeria densa * South American elodea	Lakes	Abundant	F-3 C-3	C-1 E or S-3
Eichhornia crassipes * Water-hyacinth	Canals, fresh marsh	Abundant	F-3 C-3	C-1 E or S-3
Elatine brachysperma Waterwort	Ditches	Rare	F-1 C-1	C-1 E or S-2
Eleocharis albida Saltmarsh spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis atropurpurea Spikerush	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis baldwinii Spikerush	Ditches, marsh	Infrequent	F-2 C-2	C-1 E or S-2
Eleocharis cellulosa Gulf spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis equisetoides Northern jointed spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis flavescens Spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis microcarpa Spikerush	Ditches, fresh to brackish marsh	Infrequent	F-3 C-2	C-2 E or S-2

Eleocharis montana * Spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis montevidensis Spikerush	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis obtusa Blunt spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis parvula * Dwarf spikerush	Fresh to brackish marsh	Abundant	F-2 C-2	C-2 E or S-2
Eleocharis tuberculosa Spikerush	Ditches, marsh	Infrequent	F-3 C-2	C-2 E or S-2
Eleocharis wolfii Spikerush	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Elephantopus carolinianus * Elephant's foot	Frontwoods	Common	F-2 C-1	C-2 E or S-2
Eleusine indica * Goose grass	Roadsides	Abundant	F-3 C-2	C-1 E or S-2
Elymus virginicus Canada wild rye	Roadsides, marsh banks	Common	F-3 C-2	C-1 E or S-2
Eragrostis bahiensis Lovegrass	Pastures	Infrequent	F-2 C-1	C-2 E or S-2
Eragrostis capillaris Lovegrass	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2

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Eragrostis curvula Lovegrass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis glomerata Pond lovegrass	Roadsides, ditches	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis hirsuta Lovegrass	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis hypnoides Lovegrass	Ditches, roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis lugens Lovegrass	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis oxylepis Lovegrass	Brackish marsh	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis pectinacea Lovegrass	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Eragrostis reptans Creeping lovegrass	Ditches	Infrequent	F-2 C-1	C-2 E or S-2
Eragrostis spectabilis Lovegrass	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Erechtites hieracifolia * Fireweed	Roadsides, marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Eremochloa ophiuroides * Centipede grass	Lawns, pastures	Infrequent	F-2 C-1	C-2 E or S-3

Erianthus giganteus Sugarcane plumegrass	Ditches	Infrequent	F-2 C-3	C-2 E or S-2
Erigeron canadensis Horseweed	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2
Erigeron philadelphicus * Daisy fleabane	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2
Erigeron strigosus Daisy fleabane	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Eryngium prostratum Creeping eryngo	Ditches, marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Erythrina herbacea * Coral bean	Frontwoods	Infrequent	F-2 C-2	C-2 E or S-3
Eupatorium capillifolium * Yankeeweed	Ditches, marsh banks	Abundant	F-1 C-3	C-2 E or S-2
Eupatorium coelestinum * Mistflower	Ditches, marsh banks	Abundant	F-1 C-2	C-2 E or S-3
Eupatorium incarnatum * Thoroughwort	Frontwoods	Infrequent	F-1 C-2	C-2 E or S-2
Eupatorium perfoliatum Boneset	Ditches, ponds	Infrequent	F-1 C-2	C-2 E or S-2
Eupatorium rugosum Thoroughwort	Frontwoods	Infrequent	F-1 C-2	C-2 E or S-2

Eupatorium serotinum * Thoroughwort	Roadsides, ditches marsh banks	Common	F-1 C-2	C-2 E or S-2
Euphorbia heterophylla Wild poinsettia	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Euphorbia maculata Spurge	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-1
Euphorbia supina Spurge	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Euthamia leptocephala Goldenrod	Roadsides, pastures	Infrequent	F-1 C-2	C-2 E or S-2
Festuca elatior Fescue grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Festuca octoflora Fescue grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Festuca obtusa Fescue grass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Fimbristylis annua Sedge	Ditches	Infrequent	F-2 C-2	C-2 E or S-2
Fimbristylis autumnalis Sedge	Ditches, marsh	Common	F-3 C-2	C-2 E or S-2
Fimbristylis castanea Saltmarsh fimbristylis	Brackish marsh	Infrequent	F-3 C-2	C-2 E or S-2

Fimbristylis dichotoma Sedge	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Fimbristylis miliacea Sedge	Ditches	Common	F-3 C-2	C-2 E or S-2
Fimbristylis spadicea Sedge	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Fimbristylis tomentosa Sedge	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Fimbristylis vahlii Sedge	Ditches	Infrequent	F-3 C-2	C-2 E or S-2
Galactia macreei Milkpea	Roadsides, frontwoods	Infrequent	F-3 C-2	C-2 E or S-2
Galactia volubilis Milkpea	Roadsides, marsh banks	Infrequent	F-3 C-2	C-2 E or S-2
Galium aparine * Bedstraw	Ditches, frontwoods	Common	F-2 C-1	C-2 E or S-2
Galium pilosum Bedstraw	Ditches, frontwoods	Infrequent	F-2 C-1	C-2 E or S-2
Galium tinctorium * Bedstraw	Frontwoods, marsh banks	Common	F-2 C-1	C-2 E or S-1
Geranium carolinianum * Wild geranium	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-2

Geum canadense * Avens	Frontwoods	Common	F-2 C-1	C-2 E or S-2
Glyceria arkansana Arkansas mannagrass	Roadsides	Infrequent	F-2 C-2	C-2 E or S-2
Gnaphalium obtusifolium	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-2
Gnaphalium peregrinum Cudweed	Roadsides	Infrequent	F-1 C-1	C-1 E or S-2
Gnaphalium purpureum * Cudweed	Roadsides	Common	F-1	C-1
Gratiola neglecta * Clammy hedgehyssop	Swamps, ditches	Infrequent	F-1 C-1	C-1 E or S-1
Gratiola virginiana * Virginia hedgehyssop	Swamps, ditches	Infrequent	F-1 C-1	C-1 E or S-1
Gymnostyles anthemifolia * Button burweed	Roadsides, lawns	Common	F-1 C-1	C-1 E or S-1
Habenaria repens Water-spider orchid	Fresh marsh, ponds	Infrequent	F-1 C-2	C-1 E or S-3
Hackelochloa granularis Hackelochloa	Fields	Infrequent	F-2 C-2	C-2 E or S-2
Hedyotis uniflora Oldenlandia	Fields	Infrequent	F-1 C-1	C-1 E or S-2

Hedeoma hispida Pennyroyal	Pastures	Infrequent	F-1 C-1	C-1 E or S-2
Helenium amarum * Bitterweed	Roadsides, pastures marsh banks	Abundant	F-1 C-2	C-1 E or S-2
Helenium autumnale Sneezeweed	Ditches	Infrequent	F-1 C-2	C-1 E or S-2
Heliotropium curassavicum * Seaside heliotrope	Intermediate to salt marsh	Infrequent	F-2 C-2	C-1 E or S-2
Heliotropium europaeum * Heliotrope	Roadsides, pastures	Infrequent	F-2 C-1	C-1 E or S-2
Heliotropium indicum Heliotrope	Roadsides, pastures	Infrequent	F-2 C-1	C-1 E or S-2
Heteranthera dubia * Water stargrass	Canals, ditches	Infrequent	F-2 C-2	C-1 E or S-2
Heteranthera limosa Longleaf mudplantain	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Hieracium gronovii Hawkweed	Roadsides, marsh banks	Infrequent	F-1 C-2	C-2 E or S-2
Hordeum pusillum * Little barley	Roadsides, marsh banks	Abundant	F-2 C-1	C-1 E or S-2
Hordeum vulgare Barley	Roadsides, pastures	Infrequent	F-2 C-2	C-3 E or S-3
Hydrochloa carolinensis Watergrass	Ditches	Infrequent	F-2 C-2	C-2 E or S-2

Hydrocotyle bonariensis Largeleaf pennywort	Ditches	Common	F-2 C-2	C-2 E or S-2
Hydrocotyle ranunculoides Waterpennywort	Ditches, marsh	Infrequent	F-2 C-2	C-2 E or S-2
Hydrocotyle umbellata * Umbrella pennywort	Swamps, marsh banks	Common	F-2 C-2	C-2 E or S-2
Hydrocotyle verticillata Whorled pennywort	Ditches	Common	F-2 C-2	C-2 E or S-2
Hydrolea ovata Hairy hydrolea	Ditches, ponds	Infrequent	F-1 C-2	C-1 E or S-2
Hydrolea uniflora Smooth hydrolea	Ditches	Infrequent	F-1 C-2	C-1 E or S-2
Hygrophila lacustris * Hygrophila	Ditches, swamps	Common	F-2 C-2	C-1 E or S-2
Hymenocallis eulae * Eula spiderlily	Ditches, fresh marsh	Common	F-2 C-2	C-2 E or S-3
Hypericum drummondii St. John's-wort	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2
Hypericum mutilum * St. John's-wort	Frontwoods, marsh banks	Infrequent	F-1 C-2	C-2 E or S-2
Hypericum tubulosum St. John's-wort	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2

Hypericum virginicum Marsh St. John's wort	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2
Ipomoea pandurata Wild potato	Frontwoods	Infrequent	F-1 C-2	C-2 E or S-3
Ipomoea purpurea Morning glory	Roadsides, marsh banks	Abundant	F-1 C-2	C-2 E or S-2
Ipomoea sagittata Saltmarsh morning-glory	Roadsides, marsh banks	Common	F-1 C-2	C-2 E or S-2
Iresine rhizomatosa Rootstock bloodleaf	Frontwoods, marsh banks	Infrequent	F-1 C-1	C-1 E or S-2
Iris brevicaulis * Zigzag-stemmed iris	Swamps, fresh marsh	Common	F-2 C-2	C-2 E or S-3
Iris fulva Copper-colored iris	Ditches, fresh marsh	Infrequent	F-2 C-2	C-2 E or S-3
Jacquemontia tamnifolia Tie vine	Roadsides, fields	Abundant	F-2 C-2	C-1 E or S-2
Juncus acuminatus Rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Juncus biflorus Rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Juncus bufonius Toad-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2

Juncus dichotomus Rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Juncus diffusissimus Rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Juncus effusus * Soft rush	Ditches, fresh marsh	Common	F-2 C-2	C-1 E or S-2
Juncus marginatus Rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Juncus nodatus Rush	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Juncus repens Creeping rush	Ditches	Infrequent	F-2 C-1	C-1 E or S-2
Juncus roemerianus * Black rush	Brackish to saline marsh	Abundant	F-2 C-3	C-1 E or S-2
Juncus tenuis Slender rush	Ditches, pastures	Common	F-2 C-1	C-1 E or S-1
Juncus validus Rush	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Justicia lanceolata * Water willow	Swamps	Common	F-1 C-1	C-1 E or S-1
Krigia oppositifolia Dwarf dandelion	Roadsides	Common	F-1 C-1	C-1 E or S-2

<u>Krigia</u> <u>virginiana</u> Dwarf dandelion	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-2
<u>Laportea</u> <u>canadensis</u> Wood-nettle	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-1
<u>Lathyrus</u> <u>hirsutus</u> Singletary pea	Roadsides	Infrequent	F-3 C-2	C-2 E or S-2
<u>Leersia</u> <u>hexandra</u> Southern cutgrass	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
<u>Leersia</u> <u>lenticularis</u> Catchfly cutgrass	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
<u>Leersia</u> <u>oryzoides</u> Rice cutgrass	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
<u>Leersia</u> <u>virginica</u> White grass	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
<u>Lemna</u> <u>minor</u> * Common duckweed	Canals, ponds, fresh marsh	Abundant	F-3 C-1	C-1 E or S-2
<u>Lemna</u> <u>obscura</u> Duckweed	Canals, ponds, fresh marsh	Abundant	F-3 C-1	C-1 E or S-2
<u>Lemna</u> <u>perpusilla</u> Duckweed	Canals, ponds, fresh marsh	Common	F-3 C-1	C-1 E or S-2
<u>Lemna</u> <u>valdiviana</u> Pale duckweed	Canals, ponds, fresh marsh	Common	F-3 C-1	C-1 E or S-2

Leonurus sibiricus Motherwort	Roadsides	Infrequent	F-1 C-2	C-1 E or S-1
Lepidium virginicum * Poor man's peppergrass	Roadsides, marsh banks	Abundant	F-2 C-1	C-1 E or S-2
Leptochloa fascicularis Bearded sprangletop	Roadsides	Infrequent	F-1 C-2	C-1 E or S-1
Leptochloa filiformis Red sprangletop	Roadsides, fields	Common	F-1 C-2	C-1 E or S-1
Leptochloa panicoides Sprangletop	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Leptochloa scabra Rough sprangletop	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Leptochloa uninervia Mexican sprangletop	Roadsides	Infrequent	F-1 C-1	C-1 E or S-1
Lepuropetalon spathulatum * Little people	Roadsides, ditches	Infrequent	F-1 C-1	C-1 E or S-2
Lespedeza cuneata Lespedeza	Roadsides	Infrequent	F-3 C-2	C-1 E or S-2
Lespedeza striata Lespedeza	Roadsides	Infrequent	F-3 C-2	C-1 E or S-2
Leucospora multifida Leucospora	Ditches, roadsides	Infrequent	F-1 C-1	C-1 E or S-1

Lilaeopsis carolinensis Carolina lilaeopsis	Swamps, fresh marsh	Infrequent	F-2 C-1	C-1 E or S-2
Lilaeopsis chinensis * Eastern lilaeopsis	Swamps, fresh to intermediate marsh	Abundant	F-2 C-1	C-1 E or S-2
Limnobium spongia Frogbit	Ponds, fresh marsh	Infrequent	F-2 C-2	C-2 E or S-2
Limnodea arkansana * Limnodea	Marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Limonium nashii Sea lavender	Intermediate to saline marsh	Infrequent	F-2 C-2	C-1 E or S-2
Linaria texana * Toad-flax	Roadsides, fields	Abundant	F-2 C-1	C-2 E or S-2
Lindernia anagallidea Clasping falsepimpernel	Swamps	Infrequent	F-1 C-1	C-1 E or S-1
Lindernia dubia Yellowseed falsepimpernel	Swamps	Infrequent	F-1 C-1	C-1 E or S-1
Lippia lanceolata Northern frog-fruit	Ditches, marsh banks	Infrequent	F-1 C-2	C-1 E or S-1
Lippia nodiflora * Common frog-fruit	Ditches, marsh banks	Infrequent	F-1 C-2	C-1 E or S-1
Lobelia cardinalis Cardinal-flower	Frontwoods, swamps	Infrequent	F-1 C-1	C-3 E or S-3

Lobelia puberula Downy lobelia	Frontwoods	Infrequent	F-1 C-1	C-2 E or S-2
Lolium multiflorum Rye grass	Roadsides, pastures	Common	F-1 C-2	C-2 E or S-2
Lolium perenne * Rye grass	Roadsides, pastures	Common	F-1 C-2	C-2 E or S-2
Ludwigia decurrens Primrose-willow	Ditches	Common	F-2 C-2	C-1 E or S-1
Ludwigia glandulosa Primrose-willow	Ditches	Common	F-2 C-2	C-1 E or S-1
Ludwigia leptocarpa False loosestrife	Ditches	Common	F-2 C-2	C-1 E or S-1
Ludwigia octovalvis Primrose-willow	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Ludwigia palustris * Marsh purslane	Ditches, fresh marsh	Common	F-2 C-2	C-1 E or S-1
Ludwigia peploides Floating waterprimrose	Ditches	Common	F-2 C-2	C-1 E or S-1

<u>Lycopus</u> <u>americanus</u> American bungleweed	Swamps	Infrequent	F-2 C-2	C-1 E or S-1
<u>Lycopus</u> <u>rubellus</u> * Water-horehound	Swamps	Infrequent	F-2 C-2	C-1 E or S-1
<u>Lycopus</u> <u>virginicus</u> Virginia bungleweed	Swamps	Infrequent	F-2 C-2	C-1 E or S-1
<u>Lysimachia</u> <u>japonica</u> Japanese lysimachia	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-2
<u>Lythrum</u> <u>lanceolatum</u> * Lanceleaf lythrum	Ditches	Infrequent	F-1 C-2	C-1 E or S-1
<u>Lythrum</u> <u>lineare</u> Saltmarsh lythrum	Intermediate to brackish marsh	Infrequent	F-2 C-2	C-1 E or S-3
<u>Mazus</u> <u>japonicus</u> * Mazus	Roadsides	Abundant	F-1 C-1	C-1 E or S-2
<u>Mecardonia</u> <u>acuminata</u> Purple mecardonia	Ditches	Infrequent	F-1 C-1	C-1 E or S-2
<u>Medicago</u> <u>arabica</u> Spotted bur clover	Roadsides, pastures	Abundant	F-3 C-2	C-1 E or S-2
<u>Medicago</u> <u>lupulina</u> * Black medic	Roadsides, pastures	Abundant	F-3 C-2	C-1 E or S-2
<u>Medicago</u> <u>polymorpha</u> Bur clover	Roadsides, pastures	Abundant	F-3 C-2	C-1 E or S-1

Melanthera carpenteri Melanthera	Frontwoods	Rare	F-2 C-2	C-1 E or S-2
Melica mutica Melic-grass	Frontwoods	Common	F-2 C-2	C-1 E or S-2
Melilotus alba Sweet clover	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2
Melilotus indicus * Yellow sour clover	Roadsides, pastures	Common	F-2 C-2	C-2 E or S-2
Melochia corchorifolia Chocolate-weed	Roadsides, ditches	Infrequent	F-2 C-2	C-1 E or S-2
Melothria pendula * Creeping cucumber	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-2
Micranthemum umbrosum * Shade mud-flower	Ditches	Abundant	F-1 C-2	C-1 E or S-1
Mikania cordifolia * Heartleafed climbing hemp-weed	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2
Mikania scandens * Climbing hemp-weed	Swamps, river banks	Abundant	F-1 C-3	C-1 E or S-2
Mimosa strigillosa * Sensitive-plant	Roadsides	Common	F-1 C-1	C-1 E or S-2
Mimulus alatus * Monkey flower	Ditches	Common	F-1 C-2	C-1 E or S-2

Modiola caroliniana * Carolina mallow	Roadsides, marsh banks	Common	F-2 C-1	C-1 E or S-2
Mollugo verticillata Carpet-weed	Roadsides, fields	Common	F-1 C-1	C-1 E or S-1
Monarda punctata Horsemint	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-2
Muhlenbergia schreberi Nimblewill	Roadsides	Common	F-1 C-1	C-1 E or S-1
Myosotis macrosperma * Forget-me-not	Frontwoods	Common	F-2 C-1	C-1 E or S-2
Myosurus minimus Mousetail	Ditches	Rare	F-1 C-1	C-1 E or S-2
Myriophyllum brasiliense * Parrotfeather	Canals, ponds	Common	F-1 C-2	C-2 E or S-2
Myriophyllum heterophyllum Variable watermilfoil	Canals, ponds	Common	F-1 C-2	C-2 E or S-2
Myriophyllum pinnatum Eastern watermilfoil	Canals, ponds	Common	F-1 C-2	C-2 E or S-2
Najas guadalupensis * Southern naiad	Canals, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Nelumbo lutea American lotus	Ponds, fresh marsh	Common	F-3 C-3	C-3 E or S-3

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Nemophila microcalyx * Baby blue-eyes	Frontwoods, swamps	Abundant	F-2 C-1	C-1 E or S-1
Neptunia pubescens Yellow sensitive plant	Roadsides	Infrequent	F-1 C-1	C-1 E or S-2
Nuphar luteum * Yellow pondlily	Canals, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Nymphaea mexicana Banana waterlily	Ponds, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-3
Nymphaea odorata White waterlily	Ponds, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-3
Nymphoides aquatica Big floatingheart	Ponds, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Oenothera laciniata * Evening primrose	Roadsides, marsh banks	Common	F-2 C-1	C-1 E or S-2
Oplismenus setarius * Oak forest grass	Frontwoods	Abundant	F-2 C-1	C-1 E or S-2
Oryza sativa Rice	Ditches	Common	F-3 C-2	C-3 E or S-3
Oxalis dillenii * Wood sorrel	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-2
Oxalis violacea * Violet wood sorrel	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-2

Panicum anceps Panic grass	Frontwoods	Infrequent	F-3 C-2	C-1 E or S-1
Panicum boscii Panic grass	Frontwoods	Infrequent	F-3 C-2	C-1 E or S-1
Panicum capillare Witchgrass	Roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum commutatum Panic grass	Ditches, fields	Infrequent	F-3 C-2	C-1 E or S-1
Panicum dichotomiflorum Fall panic grass	Pastures, marsh banks, ditches	Abundant	F-3 C-3	C-1 E or S-2
Panicum dichotomum Panic grass	Ditches, roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum fasciculatum Panic grass	Roadsides, fields	Infrequent	F-3 C-2	C-1 E or S-1
Panicum gymnocarpon * Broadleaf panicum	Swamps, ditches	Common	F-3 C-3	C-1 E or S-1
Panicum hemitomon * Maidencane	Fresh marsh	Common	F-3 C-2	C-1 E or S-3
Panicum hians Gaping panic grass	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Panicum lanuginosum Panic grass	Roadsides, ditches	Infrequent	F-3 C-2	C-1 E or S-1
Panicum laxiflorum Panic grass	Frontwoods	Infrequent	F-3 C-2	C-1 E or S-1

Panicum leucothrix Panic grass	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Panicum lindheimeri Panic grass	Roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum microcarpon Panic grass	Ditches, Roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum oligosanthes Panic grass	Roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum repens Dogtooth grass	Ditches, fresh to brackish marsh	Infrequent	F-3 C-2	C-1 E or S-1
Panicum reptans Panic grass	Roadsides	Infrequent	F-3 C-1	C-1 E or S-1
Panicum rigidulum Redtop panic grass	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Panicum scoparium Panic grass	Ditches, roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum sphaerocarpon Panic grass	Roadsides	Infrequent	F-3 C-2	C-1 E or S-1
Panicum virgatum Switchgrass	Fresh to intermediate marsh	Common	F-3 C-3	C-1 E or S-2
Panicum xalapense Panic grass	Roadsides	Infrequent	F-3 C-2	C-1 E or S-1

Parietaria pensylvanica * Pellitory	Marsh banks	Infrequent	F-2 C-1	C-1 E or S-1
Parthenium hysterophorus * Santa maria	Roadsides, fields	Common	F-1 C-2	C-1 E or S-2
Paspalum acuminatum Brook paspalum	Ditches, fresh marsh	Common	F-2 C-2	C-1 E or S-1
Paspalum boscianum Paspalum	Ditches, roadsides	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum ciliatifolium Paspalum	Roadsides	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum conjugatum * Paspalum	Roadsides, lawns	Common	F-2 C-1	C-1 E or S-1
Paspalum convexum Paspalum	Roadsides	Infrequent	F-2 C-1	C-1 E or S-1
Paspalum dilatatum Dallis grass	Roadsides, pastures	Abundant	F-3 C-2	C-1 E or S-2
Paspalum dissectum Mudbank paspalum	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum distichum Knotgrass	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum floridanum Paspalum	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-1

Paspalum fluitans Water paspalum	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum langei * Paspalum	Roadsides	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum lividum Longtom	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum notatum Bahia grass	Roadsides, pastures	Common	F-3 C-2	C-2 E or S-3
Paspalum plicatulum Paspalum	Roadsides, pastures	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum setaceum Paspalum	Roadsides	Infrequent	F-2 C-2	C-1 E or S-1
Paspalum urvillei * Vasey grass	Roadsides, pastures, lawns	Abundant	F-3 C-2	C-1 E or S-2
Paspalum vaginatum Jointgrass	Ditches, fresh to brackish marsh	Common	F-2 C-2	C-1 E or S-1
Passiflora incarnata * May-pop	Roadsides, fields	Common	F-2 C-2	C-3 E or S-3
Passiflora lutea * Yellow passion flower	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-2
Pennisetum typhoides Pennisetum	Roadsides, fields	Infrequent	F-3 C-2	C-2 E or S-2

Penthorum sedoides * Ditch-stonecrop	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Perilla frutescens * Beefsteak plant	Frontwoods, ditches	Common	F-2 C-2	C-1 E or S-2
Phacelia hirsuta Blue curls	Frontwoods	Rare	F-1 C-1	C-2 E or S-2
Phalaris angusta Canary grass	Roadsides, marsh banks	Common	F-2 C-2	C-2 E or S-2
Phalaris caroliniana * Canary grass	Roadsides, marsh banks	Common	F-2 C-2	C-2 E or S-2
Phragmites australis * Roseau	Fresh to intermediate marsh & banks	Abundant	F-1 C-3	C-1 E or S-3
Phryma leptostachya Lopseed	Frontwoods	Rare	F-1 C-1	C-1 E or S-2
Phyllanthus urinaria Phyllanthus	Roadsides, marsh banks	Common	F-2 C-1	C-1 E or S-1
Physalis angulata * Ground cherry	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-2
Phytolacca americana * Pokeweed	Frontwoods, marsh banks	Common	F-3 C-2	C-1 E or S-2
Pilea pumila * Clearweed	Swamps	Infrequent	F-1 C-1	C-1 E or S-1
Pistia stratiotes * Waterlettuce	Ponds, ditches, canals	Abundant	F-2 C-2	C-1 E or S-2

Plantago cordata Heartleaf plantain	Roadsides, fields	Infrequent	F-2 C-1	C-1 E or S-1
Plantago major Plaintain	Roadsides, fields	Infrequent	F-2 C-1	C-1 E or S-1
Plantago virginica * Plaintain	Roadsides, fields	Common	F-2 C-1	C-1 E or S-1
Pluchea camphorata * Camphor-weed	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Pluchea purpurascens Saltmarsh pluchea	Intermediate to brackish marsh	Common	F-1 C-2	C-1 E or S-2
Pluchea rosea Pluchea	Ditches	Infrequent	F-1 C-2	C-1 E or S-2
Poa annua * Annual bluegrass	Roadsides, lawns	Abundant	F-1 C-1	C-2 E or S-2
Poa autumnalis Bluegrass	Frontwoods	Abundant	F-1 C-1	C-2 E or S-2
Poa pratensis Bluegrass	Roadsides, pastures	Infrequent	F-2 C-2	C-2 E or S-2
Poa sylvestris Bluegrass	Frontwoods	Infrequent	F-1 C-2	C-1 E or S-1
Polygala leptocaulis Milkwort	Ditches	Infrequent	F-1 C-1	C-1 E or S-2
Polygonum aviculare Knotweed	Ditches	Infrequent	F-2 C-2	C-1 E or S-1

Polygonum bicorne Pink smartweed	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
Polygonum densiflorum Southern smartweed	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Polygonum hydropiperoides * Swamp smartweed	Ditches, marsh banks	Abundant	F-3 C-2	C-1 E or S-1
Polygonum lapathifolium Nodding smartweed	Ditches	Infrequent	F-3 C-2	C-1 E or S-1
Polygonum punctatum Dotted smartweed	Ditches	Common	F-3 C-2	C-1 E or S-1
Polymnia uvedalia Bear's foot	Frontwoods	Infrequent	F-2 C-2	C-1 E or S-2
Polypogon monspeliensis Rabbitfoot grass	Ditches	Infrequent	F-2 C-3	C-2 E or S-2
Polypremum procumbens Polly-prim	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Pontederia cordata * Pickerelweed	Ditches, canals, fresh marsh	Common	F-2 C-3	C-2 E or S-2
Portulaca oleracea Purslane	Roadsides	Infrequent	F-1 C-1	C-2 E or S-2
Potamogeton berchtoldii Berchtold pondweed	Ditches, ponds	Infrequent	F-2 C-2	C-1 E or S-2

Potamogeton diversifolius * Snailseed pondweed	Ditches, ponds	Infrequent	F-3 C-2	C-1 E or S-2
Potamogeton foliosus Leafy pondweed	Ditches, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Potamogeton nodosus Longleaf pondweed	Ditches, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Potamogeton pectinatus Sago pondweed	Ditches, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Potamogeton pusillus Slender pondweed	Ditches, ponds	Infrequent	F-2 C-2	C-1 E or S-2
Psoralia psoralioides Congo-root	Fields	Rare	F-3 C-2	C-1 E or S-2
Ptilimnium capillaceum * Mock-bishopweed	Ditches	Common	F-2 C-1	C-1 E or S-1
Pueraria lobata * Kudzu	Roadsides	Common	F-2 C-3	C-2 E or S-3
Pyrrhopappus carolinianus * False dandelion	Roadsides, fields	Common	F-1 C-2	C-1 E or S-3
Ranunculus laxicaulis Buttercup	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Ranunculus muricatus * Spring buttercup	Frontwoods, swamps	Infrequent	F-2 C-1	C-1 E or S-1
Ranunculus platensis Buttercup	Lawns, ditches	Common	F-1 C-1	C-1 E or S-1

Ranunculus pusillis Buttercup	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Ranunculus recurvatus Buttercup	Frontwoods, swamps	Infrequent	F-2 C-2	C-1 E or S-1
Ranunculus sceleratus Cursed crowfoot	Ditches, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-1
Ranunculus trilobus Buttercup	Ditches	Infrequent	F-2 C-1	C-1 E or S-2
Rhexia mariana Maryland meadow-beauty	Roadsides, ditches	Infrequent	F-1 C-1	C-1 E or S-3
Rhynchosia minima Snout bean	Roadsides	Infrequent	F-2 C-2	C-1 E or S-2
Rhynchospora caduca Beak-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Rhynchospora corniculata * Horned-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Rhynchospora macrostachya Horned-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Rhynchospora microcarpa Beak-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-1
Rhynchospora mixta Beak-rush	Ditches	Infrequent	F-2 C-2	C-1 E or S-1

Rivina humilis * Rouge-plant	Fresh to brackish marsh banks	Infrequent	F-2 C-1	C-2 E or S-2
Rorippa islandica * Bog marshcress	Ditches, swamps	Infrequent	F-2 C-2	C-1 E or S-1
Rorippa teres Tansyleaf yellowcress	Ditches, swamps	Infrequent	F-2 C-2	C-1 E or S-1
Rotala ramosior Tooth-cup	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Rottboellia exaltata Stinging grass	Roadsides, fields	Infrequent	F-2 C-2	C-1 E or S-2
Rudbeckia amplexicaulis * Black-eyed susan	Ditches, roadsides	Abundant	F-2 C-3	C-1 E or S-2
Rudbeckia triloba Black-eyed susan	Ditches, roadsides	Common	F-2 C-2	C-1 E or S-2
Ruellia brittoniana * Ruellia	Frontwoods, cities	Infrequent	F-2 C-1	C-2 E or S-3
Ruellia caroliniensis Ruellia	Frontwoods	Common	F-2 C-1	C-1 E or S-3
Rumex crispus * Yellow dock	Ditches, marsh banks	Common	F-3 C-2	C-2 E or S-2
Rumex chrysocarpus Dock	Ditches, marsh banks	Common	F-3 C-2	C-2 E or S-2

Rumex pulcher Fiddle dock	Roadsides, ditches	Infrequent	F-3 C-2	C-1 E or S-1
Rumex verticillatus * Swamp dock	Roadsides, ditches	Infrequent	F-3 C-2	C-1 E or S-1
Ruppia maritima Widgeon grass	Brackish to saline waters	Infrequent	F-3 C-3	C-1 E or S-3
Sabatia calycina * Coast rose-gentian	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-3
Sabatia campestris Rose gentian	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-3
Sabatia stellaris Star rose-gentian	Ditches, marsh banks	Infrequent	F-1 C-1	C-1 E or S-3
Sacciolepis striata Bagscale	Ditches, roadsides	Abundant	F-2 C-2	C-1 E or S-1
Sagina decumbens Pearlwort	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-1
Sagittaria lancifolia Bulltongue	Fresh to brackish marsh	Infrequent	F-2 C-2	C-1 E or S-2
Sagittaria latifolia Duckpotato	Fresh marsh, ponds	Infrequent	F-3 C-3	C-2 E or S-2
Sagittaria platyphylla Delta duckpotato	Fresh marsh	Common	F-3 C-3	C-2 E or S-2

Salicornia virginica * Woody glasswort	Saline marsh, beach	Infrequent	F-3 C-1	C-1 E or S-3
Salvia lyrata * Lyre-leaved sage	Frontwoods, roadsides	Abundant	F-2 C-1	C-1 E or S-3
Samolus parviflorus * Water-pimpernel	Swamps, marsh banks	Common	F-1 C-1	C-1 E or S-2
Sanicula canadensis * Sanicle	Frontwoods	Common	F-1 C-1	C-1 E or S-2
Saururus cernuus * Lizard's tail	Swamps, ditches, fresh marsh	Common	F-1 C-2	C-1 E or S-3
Schizachyrium tenerum * Little bluestem	Roadsides, fields	Common	F-1 C-3	C-1 E or S-2
Scirpus americanus * Freshwater three-square	Fresh to brackish marsh	Common	F-3 C-3	C-1 E or S-2
Scirpus californicus Bullwhip	Fresh to brackish marsh	Common	F-2 C-2	C-1 E or S-2
Scirpus cyperinus Wool-grass	Ditches, fresh marsh	Infrequent	F-1 C-2	C-1 E or S-2
Scirpus koilolepis Bulrush	Ditches	Infrequent	F-1 C-1	C-1 E or S-1
Scirpus olneyi Three-cornered grass	Fresh to intermediate marsh	Common	F-3 C-2	C-1 E or S-2

Scirpus validus Softstem bulrush	Intermediate to brackish marsh	Infrequent	F-2 C-2	C-1 E or S-2
Scrophularia marilandica Figwort	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-2
Scutellaria ovata Skullcap	Frontwoods, marsh banks	Infrequent	F-1 C-1	C-1 E or S-2
Secale cerale Rye	Roadsides	Infrequent	F-3 C-2	C-3 E or S-2
Senecio glabellus * Butterweed	Swamps, ditches	Abundant	F-1 C-2	C-1 E or S-3
Setaria geniculata * Knotroot bristlegrass	Roadsides, ditches	Common	F-3 C-2	C-1 E or S-2
Setaria glauca Yellow foxtail	Roadsides	Common	F-3 C-2	C-1 E or S-2
Setaria magna Giant foxtail	Ditches, fresh marsh	Infrequent	F-3 C-2	C-2 E or S-3
Setaria pallide-fusca Foxtail	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Sicyos angulatus Bur cucumber	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-2
Sida rhombifolia *	Roadsides	Abundant	F-2 C-2	C-1 E or S-1
Sisyrinchium exile * Blue-eyed grass	Roadsides	Common	F-1 C-1	C-1 E or S-3

Solanum carolinense Horse nettle	Roadsides, fields	Common	F-3 C-1	C-1 E or S-2
Solanum nigrum * Nightshade	Frontwoods, marsh banks	Common	F-3 C-1	C-1 E or S-1
Solidago altissima * Roadside goldenrod	Roadsides, fields	Common	F-1 C-3	C-1 E or S-3
Solidago sempervirens * Seaside goldenrod	Intermediate to saline marsh banks	Common	F-1 C-3	C-1 E or S-3
Soliva pterosperma * Soliva	Roadsides, lawns	Common	F-1 C-1	C-1 E or S-1
Sonchus asper * Spiny-leaved sowthistle	Roadsides	Common	F-2 C-2	C-1 E or S-1
Sonchus oleraceus * Sow thistle	Roadsides	Common	F-2 C-2	C-1 E or S-1
Sorghastrum avenaceum Indian grass	Frontwoods	Infrequent	F-1 C-1	C-1 E or S-1
Sorghum halepense * Johnson grass	Roadsides, fields	Abundant	F-2 C-3	C-2 E or S-3
Spartina alterniflora Oystergrass	Brackish to saline marsh	Abundant	F-3 C-3	C-1 E or S-3
Spartina cynosuroides * Hogcane	Brackish to saline marsh	Abundant	F-2 C-3	C-1 E or S-3
Spartina patens * Wiregrass	Intermediate to brackish marsh	Abundant	F-2 C-3	C-3 E or S-3

Specularia biflora * Venus's looking-glass	Ditches, roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-3
Spergularia mariana * Saltmarsh sand-spurrey	Brackish to saline beach flats	Common	F-2 C-1	C-1 E or S-2
Spermacoce glabra Smooth buttonweed	Ditches	Infrequent	F-2 C-1	C-1 E or S-1
Sphenoclea zeylanica Gooseweed	Ditches	Infrequent	F-2 C-2	C-1 E or S-2
Sphenopholis intermedia Prairie wedgegrass	Roadsides, fields	Infrequent	F-1 C-1	C-1 E or S-1
Sphenopholis obtusata * Prairie wedgegrass	Roadsides, fields	Common	F-1 C-2	C-1 E or S-1
Spilanthes americana * Creeping spilanthes	Ditches	Abundant	F-1 C-2	C-1 E or S-2
Spiranthes cernua Nodding ladies tresses	Fields, ditches	Infrequent	F-1 C-1	C-1 E or S-3
Spirodela oligorrhiza Spirodela	Ponds, canals, ditches	Common	F-2 C-1	C-1 E or S-2
Spirodela polyrhiza Great duckweed	Ponds, canals, ditches	Common	F-2 C-1	C-1 E or S-1
Sporobolus indicus Smutgrass	Roadsides, pastures	Abundant	F-2 C-2	C-1 E or S-2

Sporobolus vaginaeflorus Dropseed	Roadsides	Common	F-2 C-2	C-1 E or S-1
Stachys agraria Hedge-nettle	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Stachys nuttallii * Hedge-nettle	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Stachys tenuifolia Hedge-nettle	Frontwoods	Infrequent	F-2 C-1	C-1 E or S-1
Stellaria media * Common chickweed	Roadsides, marsh banks, cities	Abundant	F-3 C-1	C-1 E or S-2
Stellaria prostrata * Chickweed	Roadsides, marsh banks	Common	F-3 C-1	C-1 E or S-1
Stenotaphrum secundatum * St. Augustine grass	Lawns, pastures, marsh banks	Abundant	F-3 C-2	C-3 E or S-3
Strophostyles helvola Wild bean	Marsh banks, ditches, beach	Infrequent	F-3 C-2	C-1 E or S-2
Suaeda linearis * Sea-blite	Brackish to saline beach	Common	F-2 C-2	C-1 E or S-2
Tephrosia onobrychoides Goat's rue	Frontwoods, fields	Infrequent	F-2 C-2	C-1 E or S-2
Teucrium canadense * American germander	Ditches	Infrequent	F-2 C-2	C-1 E or S-2

Thalia dealbata Powdery thalia	Ditches	Infrequent	F-2 C-2	C-3 E or S-3
Tillaea aquatica * Pigmy-weed	Ditches	Infrequent	F-1 C-1	C-1 E or S-2
Tillandsia usneoides * Spanish moss	Epiphyte	Abundant	F-1 C-2	C-2 E or S-3
Tovara virginiana * Jump seed	Frontwoods	Common	F-2 C-2	C-1 E or S-2
Tradescantia subaspera * Spider wort	Frontwoods, ditches	Infrequent	F-1 C-1	C-1 E or S-2
Trepocarpus aethusae Trepocarpus	Ditches	Infrequent	F-1 C-2	C-1 E or S-1
Tridens ambiguus Tridens	Roadsides, pastures	Infrequent	F-1 C-2	C-1 E or S-1
Tridens flavus Tridens	Roadsides, pastures	Infrequent	F-1 C-2	C-1 E or S-1
Tridens strictus Tridens	Roadsides, pastures	Infrequent	F-1 C-2	C-1 E or S-1
Trifolium campestre Big hop clover	Roadsides, pastures	Abundant	F-3 C-2	C-3 E or S-3
Trifolium carolinianum Clover	Roadsides, pastures	Common	F-3 C-2	C-2 E or S-2

Trifolium dubium * Little hop clover	Roadsides, pastures	Common	F-3 C-1	C-2 E or S-2
Trifolium incarnatum Crimson clover	Roadsides	Abundant	F-3 C-2	C-3 E or S-3
Trifolium pratense Red clover	Roadsides, pastures	Infrequent	F-3 C-2	C-3 E or S-3
Trifolium reflexum Buffalo clover	Roadsides, pastures	Common	F-3 C-2	C-3 E or S-3
Trifolium repens * White clover	Roadsides, pastures	Common	F-3 C-2	C-3 E or S-3
Trifolium resupinatum * Reverse clover	Roadsides, pastures	Common	F-3 C-2	C-3 E or S-3
Tripsacum dactyloides Gamagrass	Fresh to brackish marsh	Infrequent	F-2 C-3	C-1 E or S-2
Triticum aestivum Wheat	Roadsides, fields	Infrequent	F-3 C-3	C-3 E or S-3
Typha domingensis Southern cattail	Ditches, ponds	Abundant	F-2 C-3	C-2 E or S-2
Typha latifolia * Broadleaf cattail	Ditches, ponds	Abundant	F-2 C-3	C-2 E or S-2
Uniola latifolia Wild oats	Ditches, river banks	Common	F-3 C-2	C-1 E or S-2

Uniola laxa Wild oats	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
Uniola sessiliflora Wild oats	Ditches	Infrequent	F-3 C-2	C-1 E or S-2
Urtica chamaedryoides * Stinging nettle	Frontwoods, swamps	Common	F-1 C-2	C-1 E or S-2
Utricularia foliosa Giant bladderwort	Ponds, canals, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Utricularia gibba Eastern bladderwort	Ponds, canals, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Utricularia radiata Little floating bladderwort	Ponds, canals, fresh marsh	Infrequent	F-2 C-2	C-1 E or S-2
Verbascum thapsus Mullein	Roadsides, fields, marsh banks	Infrequent	F-1 C-2	C-1 E or S-2
Verbena bonariensis * Vervain	Roadsides, banks	Common	F-1 C-3	C-1 E or S-2
Verbena brasiliensis * Vervain	Roadsides, banks	Common	F-1 C-3	C-1 E or S-2
Verbena canadensis Vervain	Banks in fresh marsh	Common	F-1 C-2	C-2 E or S-3
Verbena littoralis Vervain	Roadsides	Infrequent	F-1 C-2	C-1 E or S-2
Verbena urticifolia Vervain	Roadsides	Infrequent	F-1 C-2	C-1 E or S-1

Verbena xutha Vervain	Roadsides, fields	Infrequent	F-1 C-1	C-1 E or S-1
Verbesina virginica Virginia crownbeard	Frontwoods, fields	Infrequent	F-2 C-2	C-1 E or S-2
Vernonia altissima * Ironweed	Ditches, swamps	Infrequent	F-1 C-2	C-1 E or S-2
Veronica agrestis * Neckweed	Roadsides, marsh banks	Common	F-1 C-1	C-1 E or S-1
Veronica peregrina * Neckweed	Roadsides	Abundant	F-2 C-1	C-1 E or S-1
Vetiveria zizanioides Vetiveria	Ditches, cities	Rare	F-2 C-2	C-3 E or S-3
Vicia angustifolia Narrow-leaved vetch	Roadsides, pastures	Common	F-2 C-2	C-1 E or S-1
Vicia ludoviciana * Common vetch	Roadsides, pastures	Abundant	F-2 C-2	C-1 E or S-2
Vigna luteola * Deerpea	Fresh to brackish marsh	Common	F-2 C-2	C-1 E or S-2
Viola langloisii Langlois violet	Frontwoods	Infrequent	F-1 C-1	C-2 E or S-3
Viola septemloba * Violet	Frontwoods	Common	F-1 C-1	C-2 E or S-3

Wolffia arrhiza Water-meal	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffia columbiana Water-meal	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffia papulifera Water-meal	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffiella floridana Eastern wolffiella	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffiella gladiata Wolffiella	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffiella lingulata * Tongue wolffiella	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Wolffiella oblonga Oblong wolffiella	Ponds, lakes	Infrequent	F-3 C-1	C-1 E or S-3
Xanthium chinense Cocklebur	Roadsides, pastures	Infrequent	F-2 C-2	C-1 E or S-2
Zizaniopsis miliacea * Giant cutgrass	Ditches, canals, river banks	Common	F-3 C-3	C-1 E or S-2

APPENDIX B

ZOOLOGICAL ELEMENTS

Terms used in Appendixes

Rare - the animal is known to normally occur in the project area but in a less density, i.e., in low numbers per unit area. In instances where the animal approaches the geological limits of its distribution its occurrence is probably best described as "rare," although it may occasionally be found in numbers approaching the category "common."

Uncommon - found regularly, but in small numbers.

Common - the animal is well-distributed throughout the project area and can be expected to occur in fairly large numbers.

Abundant - the animal is found in large numbers throughout the project area (high density).

It should be pointed out that the above terms have different numerical applications for different species. For instance, the occurrences for the alligator snapping turtle and the southern leopard frog are designated as "common" in both cases. However, within the entire project area there are many more southern leopard frogs than alligator snapping turtles. This is due to the fact that one acre of habitat, equally suited for both species, can support more southern leopard frogs than alligator snapping turtles. But both species, according to their expected distribution patterns are common in the project area. Therefore, the respective densities of two or more species under the same occurrence designation (rare, common, and abundant) may be very different from each other, depending on the particular ecological and behavioral requirements and/or preferences of the species involved.

Migrant - the bird passes through the state on its way north. The animal may be a migrant through one part of the state and a resident in another part.

Winter or summer resident - the bird spends several months in the state, either arriving from the north to spend the winter or arriving to breed.

Habitat altered - the habitat of a species is temporarily changed, but with time the habitat will revert to approximately the original condition.

Habitat eliminated - the habitat type that a species occupies is permanently destroyed.

Habitat created - new habitat is made that allows the species to expand into an area that it could not occupy previously. For example, when a marsh-type habitat is converted to a brush-type, certain songbirds are then able to utilize the brushy area.

Minor - a small proportion of the available habitat is affected.

Moderate - a percentage of available habitat from modest to substantial is affected.

Major - nearly all the available habitat is altered.

Temporary turbidity - excessive turbidity will be created by dredging or by passage of vessels, but will subside to background lveels soon after cessation of dredging or passing of the vessel. This temporary turbidity reduces the amount of phytoplankton photosynthesis and reduces the hunting effectiveness of aquatic carnivores.

Impacts on wildlife are listed in Appendix B. The following rationale was used to assess these impacts. Bottomland and swamp habitat (625.5 acres), upland habitat (403.7 acres), marsh habitat (294.6 acres), and cleared habitat (1,071.3 acres) will be destroyed by disposal of dredged material; therefore any animals inhabiting these areas will be considered to have habitat eliminated. In the lower portion of the project area, dredged

material will be deposited on previously used disposal areas (5,229 acres) which are presently brush and will revert to brush. Therefore, any animal that inhabits brush will have habitat altered. Dredging will be done in rivers, bays, and the nearshore area; therefore, most animals inhabiting these areas will incur temporary turbidity and have habitat altered. Benthic organisms in these areas will have habitat eliminated.

ENVIRONMENTAL APPENDIX
760119

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
PROTOZOA (ONE-CELLED ANIMALS)															
RHIZOPODA (AMOEBAS)															
AMOEBA MAYORELLA SP.	COMMON	X	X	X								THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SHELLED AMOEBA ARCELLA SPP.	COMMON	X	X	X		X						THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CILIATA (CILIATES)															
STALKED CILIATE VORTICELLA SPP.	COMMON	X	X	X	X	X						THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
DINOFLAGELLATA (DINOFLAGELLATES)															
LUMINESCENT DINOFLAGELLATE NOCTILUCA SPP.	COMMON							X	X	X		THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CTENOPHORA (COMB JELLIES)															
SEA PURSE BEROE OVATA	COMMON						X	X	X	X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SEA WALNUT MNEMIOPSIS MCCRAYDI	COMMON						X	X	X	X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ROTIFERA (ROTIFERS)															

1. WOODS, SWAMPS
2. FIELDS
3. MARSH
4. LOTIC
5. LENTIC
6. UPPER BAY, 0-15 PPT
7. LOWER BAY, 15-30 PPT
8. SURF AND/OR BEACH
9. INSHORE, <10 FATHOMS
10. OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
ROTIFER ASPLACHNA SPP.	COMMON				X	X						THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ROTIFER BRACHIONUS SPP.	COMMON			X	X	X	X	X		X		THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ROTIFER KERATELLA SPP.	COMMON			X	X	X						THROUGHOUT	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ANNELIDA (SEGMENTED WORM)															
POLYCHAETA (POLYCHAETES)															
SANDWORM NEREIS SUCCINEA	COMMON			X			X	X		X		COASTAL WATERS	COSMOPOLITAN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GASTROPODA (SNAILS)															
OLIVE NERITE NERITINA RECLIVATA	#ABUNDANT			X		X	X					SOUTHERN THIRD	FLORIDA TO TEXAS	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
MARSH PERIWINKLE LITTORINA IRRORATA	COMMON			X		X	X					SOUTHERN THIRD	NEW JERSEY TO TEXAS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COFFEE MELAMPIS MELAMPUS BIDENTATUS	COMMON			X				X				COASTAL WATERS	FLORIDA TO TEXAS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER SNAIL PHYSA SP.	COMMON			X	X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, WOODS, SWAMPS	6, UPPER BAY, 0-15 PPT
2, FIELDS	7, LOWER BAY, 15-30 PPT
3, MARSH	8, SURF AND/OR BEACH
4, LOTIC	9, INSHORE, <10 FATHOMS
5, LENTIC	10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
PELECYPODA (CLAMS ETC.)															
RIBBED MUSSEL MODIOLUS DEMISSUS	# UNCOMMON							X				COASTAL WATERS	FLORIDA TO TEXAS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
HOOKED MUSSEL BRACHIDONTES RECURVUS	# RARE						X	X				COASTAL WATERS	CAPE COD TO TEXAS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
EASTERN OYSTER CRASSOSTREA VIRGINICA	COMMON						X	X				COASTAL WATERS	CANADA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DWARF SURF CLAM MULINA LATERALIS	COMMON			X			X	X	X	X		COASTAL WATERS	MAINE TO MEXICO.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BRACKISH-WATER CLAM RANGEA CUNEATA	# ABUNDANT						X					SOUTHERN THIRD	NORTH-WEST FLORIDA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BROWN RANGIA RANGIA FLEXUOSA	# RARE						X	X				COASTAL WATERS	LOUISIANA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COQUINA SHELL DONAX VARIABILIS	ABUNDANT								X			COASTAL WATERS	VIRGINIA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
STOUT TAGELUS TAGELUS PLEBEIUS	COMMON						X					COASTAL WATERS	CAPE COD TO MEXICO.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PURPLISH TAGELUS TAGELUS DIVISUS	COMMON							X				COASTAL WATERS	CAPE COD TO TEXAS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

INVERTEBRATES

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
CAROLINA MARSH CLAM POLYMESODA CAROLINIANA	COMMON						X	X				SOUTHERN THIRD	VIRGINIA TO MEXICO,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
ASIATIC CLAM CORBICULA MANILENSIS	UNCOMMON				X	X						THROUGHOUT	INTRODUCED THROUGH MUCH OF U.S. RIV. TO TENN. AND OHIO VAL., GULF COAST AND SOUTH ATL. TO VIR.	MINOR HABITAT CREATION	TEMPORARY TURBIDITY
FRESHWATER CLAM QUADRULA SPP.	UNCOMMON				X	X						THROUGHOUT	MICH. TO MINN. AND SOUTH TO TEX. AND ALA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM ANODONTA SP.	UNCOMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM GLEBULA ROTUNDATA	UNCOMMON				X	X						THROUGHOUT	FLORIDA TO TEXAS AND NORTH TO ARK.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM CORUNCULINA TEXASENSIS	ABUNDANT				X	X						THROUGHOUT	FLORIDA TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM LIGUMIA SP.	UNCOMMON				X	X						THROUGHOUT	NEW YORK TO NORTH DAKOTA AND SOUTH TO TEXAS AND ALABAMA	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM SPHAERIUM SPP.	UNCOMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM MUSCULIUM SPP.	UNCOMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FRESHWATER CLAM EUPERA SP.	UNCOMMON				X	X						THROUGHOUT	FLORIDA TO TEXAS AND TROPICS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, WOODS, SWAMPS	6, UPPER BAY, 0-15 PPT	
2, FIELDS	7, LOWER BAY, 15-30 PPT	
3, MARSH	8, SURF AND/OR BEACH	
4, LOTIC	9, INSHORE, <10 FATHOMS	
5, LENTIC	10, OFFSHORE, >10 FATHOMS	

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
FRESH-WATER MUSSEL MYTILOPSIS LEUCOPHAETA	# ABUNDANT				X	X	X					SOUTHERN THIRD	NEW YORK TO MEXICO	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
FRESHWATER CLAM ELLIPTIO SPP.	# UNCOMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CEPHALOPODA (SQUID ETC.)															
THUMBSTALL SQUID LOLLIGUNCULA BREVIS	COMMON						X	X		X	X	COASTAL WATERS	DELAWARE TO GUIANAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CLADOCERA (WATER FLEAS)															
WATER FLEA BOSMINA SPP.	RARE				X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA DAPHNIA SPP.	COMMON				X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA DIAPHANOSOMA BRACHYURUM	COMMON				X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA EVADNE TERGETINA	COMMON							X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA PENILIA AVIROSTRIS	COMMON							X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA PODON POLYPHEMOIDES	COMMON						X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

*1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT *
*2, FIELDS 7, LOWER BAY, 15-30 PPT *
*3, MARSH 8, SURF AND/OR BEACH *
*4, LOTIC 9, INSHORE, <10 FATHOMS *
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
WATER FLEA SIDA CRYSTALLINA	COMMON					X						THROUGHOUT	THROUGHOUT NORTH AMERICA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA SCAPHOLEBERIS SP,	COMMON					X						THROUGHOUT	THROUGHOUT NORTH AMERICA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WATER FLEA ALONA SP,	COMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPODA (COPEPODS)															
COPEPOD ACARTIA TONSA	ABUNDANT			X	X	X	X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD CALIGUS SPP,	COMMON							X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD CENTROPAGES SPP,	ABUNDANT						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD CORYCAEUS SPP,	COMMON							X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD CYCLOPS SPP,	COMMON			X	X	X						THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD DIAPTOMUS SPP,	COMMON			X	X	X	X					THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
COPEPOD ERGASILUS SPP.	COMMON				X	X	X					THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD EUCALANUS SP.	RARE						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMP. AND TROP.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD EUCYCLOPS SPP.	COMMON			X	X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD EURYTEMORA AFFINIS	COMMON			X	X	X	X	X		X		COASTAL WATERS	ATLANTIC AND GULF.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD HALICYCLOPS FOSTERI	COMMON			X	X	X	X	X				SOUTHERN THIRD	ATLANTIC, PACIFIC AND GULF COASTS	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD LABIDOCERA AESTIVA	ABUNDANT			X	X	X	X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
COPEPOD MESOCYCLOPS SP.	COMMON				X	X						THROUGHOUT	THROUGHOUT NORTH AMERICA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD ONCAEA SP.	COMMON							X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMP. AND TROP.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD PARACALANUS SP.	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD SAPPHIRINA NIGROMACULATA	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

*1, WOODS, SWAMPS	6, UPPER BAY, 0-15 PPT	*2, FIELDS	7, LOWER BAY, 15-30 PPT
*3, MARSH	8, SURF AND/OR BEACH	*4, LOTIC	9, INSHORE, <10 FATHOMS
*5, LENTIC	10, OFFSHORE, >10 FATHOMS		

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
COPEPOD TEMORA SPP.	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD TORTANUS SP.	COMMON						X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
COPEPOD UNDINULA VULGARIS	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ISOPODA (AQUATIC SOW BUG)															
AQUATIC SOW BUG AEGATHOA OCULATA	COMMON						X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
AQUATIC SOW BUG EDOTEA MONTOSA	UNCOMMON				X	X	X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
AQUATIC SOW BUG ACINUS DEPRESSUS	UNCOMMON						X	X		X		COASTAL WATERS	ATLANTIC AND GULF COASTS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
AMPHIPODA (SCUDS)															
SCUD COROPHIUM SPP.	COMMON				X	X	X	X		X	X	COASTAL WATERS	COSMOPOLITAN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SCUD GAMMARUS SPP.	COMMON			X	X	X	X	X		X	X	THROUGHOUT	NORTH AMERICA	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
STOMATOPODA (MANTIS SHRIMPS)															

1, WOODS, SWAMPS	6, UPPER BAY, 0-15 PPT
2, FIELDS	7, LOWER BAY, 15-30 PPT
3, MARSH	8, SURF AND/OR BEACH
4, LOTIC	9, INSHORE, <10 FATHOMS
5, LENTIC	10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
MANTIS SHRIMP SQUILLA EMPUSA	COMMON						X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DECAPODA (CRABS AND SHRIMP)															
CRAWFISH CAMBARELLUS PUER	#RARE			X	X	X						THROUGHOUT EXCEPT FLORIDA PARISHES	LOUISIANA, TEXAS AND ARKANSAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DWARF CRAWFISH CAMBARELLUS SHUFELDTI	#RARE			X	X	X						RED RIVER AND MISS, VALLEYS	MISSISSIPPI BASIN,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CRAWFISH CAMBARUS DIOGENES	#RARE			X	X	X						SOUTH-EASTERN ONE-THIRD	EAST OF CONTINENTAL DIVIDE	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CRAWFISH CAMBARUS HEDGPETHI	#RARE			X	X	X						THROUGHOUT	COASTAL PLAIN, LOUISIANA TO FLORIDA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CRAWFISH ORCONECTES LANCIFER	#RARE				X	X						THROUGHOUT	ILLINOIS TO LOUISIANA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CRAWFISH ORCONECTES PALMERI	#RARE				X							THROUGHOUT	TENN, TO OKLA, AND SOUTH TO TEX, AND LA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CRAWFISH ORCONECTES DIFFICILIS	#RARE				X							SOUTHERN HALF	SOUTHERN LOUISIANA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WHITE OR RIVER CRAWFISH PROCAMBARUS BLANDINGII	#COMMON	X			X	X						THROUGHOUT	MISS, RIVER AND GREAT LAKES DRAINAGES SOUTH TO GULF,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1. WOODS, SWAMPS	6. UPPER BAY, 0-15 PPT
2. FIELDS	7. LOWER BAY, 15-30 PPT
3. MARSH	8. SURF AND/OR BEACH
4. LOTIC	9. INSHORE, <10 FATHOMS
5. LENTIC	10. OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
		GENERAL HABITAT													
RED SWAMP CRAWFISH PROCAMBARUS CLARKII	# ABUNDANT	X		X	X	X						THROUGHOUT	KY. TO ARK. AND SOUTH TO TEX. AND FLA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PENAEIDAE (SHRIMP)															
BROWN SHRIMP PENAEUS AZTECUS	# RARE						X	X		X	X	COASTAL WATERS	NEW JERSEY TO URUGUAY.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WHITE SHRIMP PENAEUS SETIFERUS	# COMMON						X	X		X	X	COASTAL WATERS	NEW YORK TO CAPE CANAVERAL, PENSACOLA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SEABOB XIPHOPENEUS KROYERI	COMMON						X	X	X	X	X	COASTAL WATERS	NORTH CAROLINA TO BRAZIL.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SHRIMP TRACHYPENEUS SIMILIS	UNCOMMON							X		X	X	COASTAL WATERS	CHESAPEAKE BAY TO TEXAS AND INDIES.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SERGESTIDAE (SERGESTID SHRIMP)															
NETCLINGER ACETES AMERICANUS	COMMON									X	X	COASTAL WATERS	N. CAROLINA TO TEXAS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PALAEMONIDAE (GRASS SHRIMP ETC.)															
RIVER SHRIMP MACROBRACHIUM OHIONE	# ABUNDANT				X	X	X					THROUGHOUT	MISS. RIVER FROM OHIO SOUTH, OTHER ATLANTIC AND GULF RIVERS.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
RIVER SHRIMP MACROBRACHIUM ACANTHURUS	# RARE				X	X	X					THROUGHOUT	NORTH CAROLINA TO BRAZIL IN RIVERS AND BAYS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
GRASS SHRIMP PALAEMONETES VULGARIS	COMMON						X	X				COASTAL WATERS	MASS, TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GRASS SHRIMP PALAEMONETES INTERMEDIUS	COMMON						X	X				COASTAL WATERS	N,Y, TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GRASS SHRIMP PALAEMONETES PUGIO	# ABUNDANT						X	X				COASTAL WATERS	MASS, TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GRASS SHRIMP PALAEMONETES RADIAKENSIS	# ABUNDANT			X	X	X						THROUGHOUT	ROCKIES TO ALLEGHENIES, CANADA TO GULF,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GRASS SHRIMP PALAEMONETES PALUDOSUS	RARE			X	X	X						THROUGHOUT	ATLANTIC AND GULF DRAINAGES,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PAGURIDAE (HERMIT CRABS)															
HERMIT CRAB PAGURUS SPP,	COMMON						X	X	X	X	X	COASTAL WATERS	NOVA SCOTIA TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PORTUNIDAE (PORTUNID CRABS)															
BLUE CRAB CALLINECTES SAPIDUS	ABUNDANT			X		X	X	X	X	X	X	COASTAL WATERS	NOVA SCOTIA TO URUGUAY,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
XANTHIDAE (XANTHID CRABS)															
MUD CRAB RHITHROPANOPEUS HARRISII	# ABUNDANT			X			X					COASTAL WATERS	CANADA TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

INVERTEBRATES

*1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT *
*2, FIELDS 7, LOWER BAY, 15-30 PPT *
*3, MARSH 8, SURF AND/OR BEACH *
*4, LOTIC 9, INSHORE, <10 FATHOMS *
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
GRAPSIDAE (GRAPSID CRABS)															
RED-JOINTED FIDDLER **UCA MINAX**	ABUNDANT	X	X	X	X		X					COASTAL WATERS	MASS, TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MUD FIDDLER **UCA PUGNAX**	COMMON			X				X				COASTAL WATERS	CAPE COD TO FLA, AND FLA, TO TEX,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MYSIDACEA (MYSID SHRIMP)															
MYSID SHRIMP **MYSIDOPSIS ALMYRA**	COMMON						X					SOUTH-EASTERN ONE-THIRD	LOUISIANA AND FLORIDA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CUMACEA (CUMACEANS)															
CUMACEAN **LEPTOCUMA MINOR**	UNCOMMON						X	X		X	X	COASTAL WATERS	ATLANTIC AND GULF COASTS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CIRRIPEDIA (BARNACLES)															
BARNACLE **BALANUS SPP,**	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN, TEMPERATE AND TROPICAL,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
ARACHNIDA (SPIDERS, MITES ETC,)															
LYCOSIDAE (WOLF SPIDERS)															
WOLF SPIDER **LYCOSA SPP,**	COMMON	X	X									THROUGHOUT	NORTH AMERICA,	MINOR HABITAT ELIMINATION	

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
INSECTA (INSECTS)															
PLECOPTERA (STONFLIES)															
STONE FLY PERLESTA SPP.	COMMON	X	X		X							THROUGHOUT	GREAT LAKES SOUTHWARD.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
EPHEMEROPTERA (MAYFLIES)															
MAYFLY CAENIS SP	COMMON				X	X						THROUGHOUT	NORTH AMERICA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ODONATA (DRAGONFLIES AND DAMSELFLIES)															
ANISOPTERA (DRAGONFLIES)															
DRAGONFLY ANAX SP.	COMMON					X						THROUGHOUT	ADULT THROUGHOUT NORTH AMERICA, NYMPH THROUGHOUT U. S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DRAGONFLY CANNACRIA GRAVIDA	ABUNDANT		X	X								THROUGHOUT	SOUTHERN U.S.,	MINOR HABITAT ELIMINATION	
DRAGONFLY CELITHEMIS SP.	COMMON					X						THROUGHOUT	THROUGHOUT U.S. EXCEPT NORTHWEST.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DRAGONFLY EPIAESCHNA SP.	COMMON	X			X	X						THROUGHOUT	EASTERN U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
DRAGONFLY ERYTHEMIS SIMPLICOLLIS	ABUNDANT	X				X						THROUGHOUT	THROUGHOUT U.S. LARVAE	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

INVERTEBRATES

1. WOODS, SWAMPS
2. FIELDS
3. MARSH
4. LOTIC
5. LENTIC
6. UPPER BAY, 0-15 PPT
7. LOWER BAY, 15-30 PPT
8. SURF AND/OR BEACH
9. INSHORE, <10 FATHOMS
10. OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
DRAGONFLY LIBELLULA SPP.	ABUNDANT	X				X						SOUTHERN HALF	LOCALLY THROUGHOUT U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
DRAGONFLY ERYTHEMIS TENERA	ABUNDANT					X						THROUGHOUT	SOUTHERN AND EASTERN U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ZYGOPTERA (DAMSELFLIES)															
DAMSELFLY ENALLAGMA SP.	COMMON			X	X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
DAMSELFLY ISCHNURA POSITA	ABUNDANT				X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DAMSELFLY ISCHNURA RAMBURII	ABUNDANT					X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
HEMIPTERA (BUGS)															
GIANT WATER BUG BELOSTOMA SPP.	COMMON	X			X	X						THROUGHOUT	SOUTHERN U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
MARSH TREADER HYDROMETRA SPP.	COMMON			X	X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
WATER SCORPION RANATRA SPP.	COMMON			X	X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
WATER TREADER MESOVELIA SPP.	COMMON				X	X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1, WOODS, SWAMPS	6, UPPER BAY, 0-15 PPT
2, FIELDS	7, LOWER BAY, 15-30 PPT
3, MARSH	8, SURF AND/OR BEACH
4, LOTIC	9, INSHORE, <10 FATHOMS
5, LENTIC	10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
GIANT WATER BUG **BENACUS SP,**	COMMON				X	X						THROUGHOUT	EASTERN AND CENTRAL U,S,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
LEPIDOPTERA (BUTTERFLIES AND MOTHS)															
MONARCH **DANAUS PLEXIPPUS**	COMMON	X	X									THROUGHOUT	WESTERN HEMISPHERE,	MINOR HABITAT ELIMINATION	
COLEOPTERA (BEETLES)															
WHIRLIGIG BEETLE **GYRINUS SP,**	COMMON				X	X	X					THROUGHOUT	NORTH AMERICA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
DIPTERA (FLIES, MOSQUITOS ETC,)															
HORSEFLY **TABANUS SPP,**	COMMON	X	X	X		X						THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MIDGE PENTANEURA SPP,	COMMON	X	X	X	X	X						THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MIDGE **TENDIPES SPP,**	COMMON	X	X	X	X	X						THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MOSQUITO **CULEX SPP,**	ABUNDANT	X	X	X		X						THROUGHOUT	THROUGHOUT U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MOSQUITO **AEDES SOLLICITANS**	COMMON			X								COASTAL AREAS	ATLANTIC AND GULF COASTS, AND MIDWEST U,S,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1. WOODS, SWAMPS 6. UPPER BAY, 0-15 PPT
2. FIELDS 7. LOWER BAY, 15-30 PPT
3. MARSH 8. SURF AND/OR BEACH
4. LOTIC 9. INSHORE, <10 FATHOMS
5. LENTIC 10. OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
PHANTOM MIDGE **CHAOBORUS SPP.**	COMMON					X						THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
ORTHOPTERA (CRICKETS, ROACHES, ETC.)														
FIELD CRICKET ACHETA DOMESTICA	COMMON		X									THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION
HYMENOPTERA (BEES, ANTS, ETC.)														
HONEY BEE **APIS MELLIFERA**	COMMON	X	X									THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION
FIRE ANT **SOLENOPSIS SPP.**	COMMON	X	X	X								THROUGHOUT	SOUTHERN U.S.	MINOR HABITAT ELIMINATION
HOMOPTERA (CICADAS, APHIDS ETC.)														
CICADA **MAGICICADA SPP.**	COMMON	X										THROUGHOUT	THROUGHOUT U.S.	MINOR HABITAT ELIMINATION
DIPLOPODA (MILLIPEDES)														
MILLIPEDE **NARCEUS SPP.**	COMMON	X	X									THROUGHOUT	U.S.	MINOR HABITAT ELIMINATION
CHAETOGNATHA (ARROW WORMS)														

1, WOODS, SWAMPS 6, UPPER BAY, 0-15 PPT
2, FIELDS 7, LOWER BAY, 15-30 PPT
3, MARSH 8, SURF AND/OR BEACH
4, LOTIC 9, INSHORE, <10 FATHOMS
5, LENTIC 10, OFFSHORE, >10 FATHOMS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
ARROW WORM SAGGITA HISPIDA	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
UROCHORDATA (UROCHORDATES)															
UROCHORDATE OIKOPLEURA SPP.	COMMON						X	X		X	X	COASTAL WATERS	COSMOPOLITAN.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

MARINE AND ESTUARINE FISH

- 1, OFFSHORE, >10 FATHOMS IN OPEN GULF
- 2, INSHORE, <10 FATHOMS IN OPEN GULF
- 3, PERMANENT ESTUARINE INHABITANT
- 4, ESTUARINE DEPENDENT 6, SURF ZONE
- 5, VISITS ESTUARIES 7, COMM. NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
CARCHARHINIDAE (REQUIEM SHARKS)															
BULL SHARK **CARCHARHINUS LEUCAS**	RARE IN WINTER COMMON IN SUMMER		X			X						COASTAL WATERS	NEW YORK TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PRISTIDAE (SAWFISHES)															
SMALLTOOTH SAWFISH **PRISTIS PECTINATA**	RARE		X			X						COASTAL WATERS, ENTERS RIVERS	NEW YORK TO BRAZIL,	TEMPORARY TURBIDITY	
DASYATIDAE (STINGRAYS)															
ATLANTIC STINGRAY **DASYATIS SABINA**	RARE	X	X		X							COASTAL WATERS, ENTERS RIVERS	CHESAPEAKE BAY TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ELOPIDAE (TARPONS)															
LADYFISH **ELOPS SAURUS**	RARE		X		X		X					COASTAL WATERS, ENTERS RIVERS	CAPE COD TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
TARPON **MEGALOPS ATLANTICA**	RARE		X		X							COASTAL WATERS, ENTERS RIVERS	CANADA TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ANGUILLIDAE (FRESHWATER EELS)															

1, OFFSHORE, >10 FATHOMS IN OPEN GULF
2, INSHORE, <10 FATHOMS IN OPEN GULF
3, PERMANENT ESTUARINE INHABITANT
4, ESTUARINE DEPENDENT
5, VISITS ESTUARIES
6, SURF ZONE
7, COMM, NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
AMERICAN EEL **ANGUILLA ROSTRATA**	COMM, IN WINTER, RARE IN SUMMER	X	X			X						COASTAL WATERS, ENTERS RIVERS	CANADA TO BRAZIL, CATADROMOUS,	MINOR HABITAT ALTERATION, TEMPORARY TURBIDITY
OPHICHTHIDAE (SNAKE EELS)														
SPECKLED WORM EEL **MYROPHIS PUNCTATUS**	ABUNDANT	X	X			X						COASTAL WATERS	FLA, TO MEX,	TEMPORARY TURBIDITY
CLUPEIDAE (HERRINGS)														
SKIPJACK HERRING **ALOSA CHRYSOCHLORIS**	RARE ANADROMOUS	X	X			X						COASTAL WATERS, ENTERS RIVERS	GULF OF MEXICO, NORTH IN RIVERS TO MINNESOTA,	TEMPORARY TURBIDITY
GULF MENHADEN **BREVOORTIA PATRONUS**	ABUNDANT	X	X		X							COASTAL WATERS	FLORIDA TO BRAZIL,	MINOR HABITAT ALTERATION, TEMPORARY TURBIDITY
ENGRAULIDAE (ANCHOVIES)														
STRIPED ANCHOVY **ANCHOA HEPSETUS**	RARE	X	X			X						COASTAL WATERS	CANADA TO URUGUAY,	TEMPORARY TURBIDITY
BAY ANCHOVY **ANCHOA MITCHILLI**	ABUNDANT		X		X							COASTAL WATERS	MAINE TO MEXICO,	MINOR HABITAT ALTERATION, TEMPORARY TURBIDITY
ARIIDAE (SEA CATFISHES)														
SEA CATFISH **ARIUS FELIS**	ABUNDANT		X		X		X					COASTAL WATERS	CAPE COD TO TEXAS,	MINOR HABITAT ALTERATION, TEMPORARY TURBIDITY
GAFFTOPSAIL CATFISH **BAGRE MARINUS**	COMMON		X		X		X					COASTAL WATERS	CAPE COD TO PANAMA,	MINOR HABITAT ALTERATION, TEMPORARY TURBIDITY

MARINE AND ESTUARINE FISH

1, OFFSHORE, >10 FATHOMS IN OPEN GULF
2, INSHORE, <10 FATHOMS IN OPEN GULF
3, PERMANENT ESTUARINE INHABITANT
4, ESTUARINE DEPENDENT
5, VISITS ESTUARIES
6, SURF ZONE
7, COMM, NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
BATRACHOIDIDAE (TOADFISHES)															
GULF TOADFISH **OPSANUS BETA**	RARE			X								COASTAL WATERS	FLORIDA TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
GOBIESOCIDAE (CLINGFISHES)															
SKILLETFISH **GOBIESOX STRUMOSUS**	RARE		X		X							COASTAL WATERS	CHESAPEAKE BAY TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CYPRINODONTIDAE (KILLIFISHES)															
DIAMOND KILLIFISH **ADINIA XENICA**	UNCOMMON			X								COASTAL WATERS, ENTERS FRESHWATER	FLORIDA TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SHEEPSHEAD MINNOW **CYPRINODON VARIEGATUS**	ABUNDANT			X								COASTAL WATERS	CAPE COD TO MEXICO,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GULF KILLIFISH **FUNDULUS GRANDIS**	ABUNDANT			X								COASTAL WATERS	FLORIDA TO MEXICO,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SALTMARSH TOPMINNOW **FUNDULUS JENKINSI**	UNCOMMON			X								COASTAL WATERS, ENTERS FRESHWATER	FLORIDA TO MEXICO,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BAYOU KILLIFISH **FUNDULUS PULVEREUS**	UNCOMMON			X								COASTAL WATERS	ALABAMA TO TEXAS,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, OFFSHORE, >10 FATHOMS IN OPEN GULF
2, INSHORE, <10 FATHOMS IN OPEN GULF
3, PERMANENT ESTUARINE INHABITANT
4, ESTUARINE DEPENDENT6, SURF ZONE
5, VISITS ESTUARIES 7, COMM, NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
RAINWATER KILLIFISH LUCANIA PARVA	COMMON			X								COASTAL WATERS, ENTERS FRESHWATER	CAPE COD TO MEXICO,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
ATHERINIDAE (SILVERSIDES)														
ROUGH SILVERSIDE MEMBRAS MARTINICA	COMMON	X			X		X					COASTAL WATERS, ENTERS FRESHWATER	FLORIDA TO MEXICO,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
TIDEWATER SILVERSIDE MENIDIA BERYLLINA	ABUNDANT		X		X		X					COASTAL WATERS, ENTERS FRESHWATER	MASS, TO MEXICO,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY
SYNGNATHIDAE (PIPEFISHES AND SEAHORSES)														
CHAIN PIPEFISH SYNGNATHUS LOUISIANAE	UNCOMMON	X	X		X							COASTAL WATERS	VIRGINIA TO TEXAS,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
GULF PIPEFISH SYNGNATHUS SCOVELLI	COMMON	X	X		X							COASTAL WATERS, ENTERS FRESHWATER	FLORIDA TO MEXICO,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
CARANGIDAE (JACKS AND POMPANOS)														
CREVALLE JACK CARANX HIPPOS	RARE IN WINTER COMMON IN SUMMER	X	X			X		X				COASTAL WATERS	NOVA SCOTIA TO BRAZIL,	TEMPORARY TURBIDITY

MARINE AND ESTUARINE FISH

1, OFFSHORE, >10 FATHOMS IN OPEN GULF
2, INSHORE, <10 FATHOMS IN OPEN GULF
3, PERMANENT ESTUARINE INHABITANT
4, ESTUARINE DEPENDENT 6, SURF ZONE
5, VISITS ESTUARIES 7, COMM, NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
SPARIDAE (PORGIES)														
SHEEPSHEAD ARCHOSARGUS PROBATOCEPHALUS	COMMON	X			X			X				COASTAL WATERS	MAINE TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
PINFISH LAGODON RHOMBOIDES	RARE	X	X		X		X					COASTAL WATERS	MASSACHUSETTS TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
SCIAENIDAE (DRUMS)														
SILVER PERCH BAIRDIELLA CHRYSURA	UNCOMMON	X			X		X					COASTAL WATERS	NEW YORK TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
SAND SEATROUT CYNOSCION ARENARIUS	ABUNDANT	X	X		X		X					COASTAL WATERS	VIRGINIA TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
SPOTTED SEATROUT CYNOSCION NEBULOSUS	COMMON		X		X		X					COASTAL WATERS	NEW YORK TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
SPOT LEIOSTOMUS XANTHURUS	COMMON		X		X		X					COASTAL WATERS	CAPE COD TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
SOUTHERN KINGFISH MENTICIRRHUS AMERICANUS	COMMON	X	X		X		X					COASTAL WATERS	NEW YORK TO TEXAS,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
GULF KINGFISH MENTICIRRHUS LITTORALIS	UNCOMMON	X	X				X					COASTAL WATERS	CHESAPEAKE BAY TO TEXAS,	TEMPORARY TURBIDITY
NORTHERN KINGFISH MENTICIRRHUS SAXATILIS	UNCOMMON	X	X			X	X					COASTAL WATERS	MAINE TO TEXAS,	TEMPORARY TURBIDITY

1, OFFSHORE, >10 FATHOMS IN OPEN GULF
2, INSHORE, <10 FATHOMS IN OPEN GULF
3, PERMANENT ESTUARINE INHABITANT
4, ESTUARINE DEPENDENT 6, SURF ZONE
5, VISITS ESTUARIES 7, COMM, NEAR RIGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
		GENERAL HABITAT													
ATLANTIC CROAKER MICROPOGON UNDULATUS	ABUNDANT	X	X		X		X					COASTAL WATERS	CAPE COD TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BLACK DRUM POGONIAS CROMIS	ABUNDANT		X		X							COASTAL WATERS	CAPE COD TO ARGENTINA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
RED DRUM SCIAENOPS OCELLATA	ABUNDANT		X		X		X					COASTAL WATERS	CAPE COD TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
STAR DRUM STELLIFER LANCEOLATUS	RARE	X	X			X						COASTAL WATERS	SOUTH CAROLINA TO TEXAS,	TEMPORARY TURBIDITY	
EPHIPPIDAE (SPADEFISHES)															
ATLANTIC SPADEFISH CHAETODIPTERUS FABER	COMMON	X	X		X		X	X				COASTAL WATERS	CAPE COD TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
MUGILIDAE (MULLETS)															
STRIPED MULLET MUGIL CEPHALUS	COMMON CATADROM,		X		X		X					COASTAL WATERS, ENTERS FRESHWATER	MAINE TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WHITE MULLET MUGIL CUREMA	RARE	X			X							COASTAL WATERS, ENTERS FRESHWATER	CAPE COD TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
POLYNEMIDAE (THREADFINS)															
ATLANTIC THREADFIN POLYDACTYLUS OCTONEMUS	RARE	X	X		X		X					COASTAL WATERS	MASSACHUSETTS TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

MARINE AND ESTUARINE FISH

*1, OFFSHORE, >10 FATHOMS IN OPEN GULF *
*2, INSHORE, <10 FATHOMS IN OPEN GULF *
*3, PERMANENT ESTUARINE INHABITANT *
*4, ESTUARINE DEPENDENT 6, SURF ZONE *
*5, VISITS ESTUARIES 7, COMM, NEAR RIGS *

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
BLENNIIDAE (COMBTOOTH BLENNIES)															
STRIPED BLENNY CHASMODES BOSQUIANUS	RARE	X	X			X						COASTAL WATERS	NEW YORK TO TEXAS	TEMPORARY TURBIDITY	
CRESTED BLENNY HYPLEUROCHILUS GEMINATUS	COMMON	X	X			X						COASTAL WATERS	SOUTH CAROLINA TO TEXAS,	TEMPORARY TURBIDITY	
FEATHER BLENNY HYPSOBLENNIUS HENTZI	RARE		X		X							COASTAL WATERS	CHESAPEAKE BAY TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
FRECKLED BLENNY HYPSOBLENNIUS IONTHAS	RARE		X			X						COASTAL WATERS	SOUTH CAROLINA TO TEXAS,	TEMPORARY TURBIDITY	
ELEOTRIDAE (SLEEPERS)															
FAT SLEEPER DORMITATOR MACULATUS	UNCOMMON		X	X								COASTAL WATERS, ENTERS FRESHWATER	NORTH CAROLINA TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SPINYCHEEK SLEEPER ELEOTRIS PISONIS	UNCOMMON		X	X								COASTAL WATERS, ENTERS FRESHWATER	SOUTH CAROLINA TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
GOBIIDAE (GOBIES)															
VIOLET GOBY GOBIOIDES BROUSSONNETI	UNCOMMON	X	X			X						COASTAL WATERS, ENTERS FRESHWATER	FLORIDA TO BRAZIL,	TEMPORARY TURBIDITY	
DARTER GOBY GOBIONELLUS BOLEOSOMA	COMMON		X		X		X					COASTAL WATERS, ENTERS FRESHWATER	NORTH CAROLINA TO BRAZIL,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

*1, OFFSHORE, >10 FATHOMS IN OPEN GULF *
*2, INSHORE, <10 FATHOMS IN OPEN GULF *
*3, PERMANENT ESTUARINE INHABITANT *
*4, ESTUARINE DEPENDENT6, SURF ZONE *
*5, VISITS ESTUARIES 7, COMM, NEAR RIGS *

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
SHARPTAIL GOBY GOBIONELLUS HASTATUS	COMMON		X		X							COASTAL WATERS	NORTH CAROLINA TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
FRESHWATER GOBY GOBIONELLUS SHUFELDTI	COMMON		X		X							COASTAL WATERS, ENTERS FRESHWATER	NORTH CAROLINA TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
NAKED GOBY GOBIOSOMA BOSCI	COMMON		X	X								COASTAL WATERS	NEW YORK TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CLOWN GOBY MICROGOBIUS GULOSUS	RARE		X	X								COASTAL WATERS, ENTERS FRESHWATER	CHESAPEAKE BAY TO TEXAS,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
STROMATEIDAE (BUTTERFISHES)															
GULF BUTTERFISH PEPRILUS BURTI	UNCOMMON		X		X							COASTAL WATERS	NOVA SCOTIA TO MEXICO,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
TRIGLIDAE (SEAROBINS)															
BIGHEAD SEAROBIN PRIONOTUS TRIBULUS	COMMON		X			X						COASTAL WATERS	LONG ISLAND TO MEXICO,	TEMPORARY TURBIDITY	
BOTHIDAE (LEFTEYE FLOUNDERS)															
BAY WHIFF CITHARICHTHYS SPILOPTERUS	RARE	X	X			X						COASTAL WATERS, ENTERS FRESHWATER	NEW JERSEY TO BRAZIL,	TEMPORARY TURBIDITY	

*1, OFFSHORE, >10 FATHOMS IN OPEN GULF *
*2, INSHORE, <10 FATHOMS IN OPEN GULF *
*3, PERMANENT ESTUARINE INHABITANT *
*4, ESTUARINE DEPENDENT 6, SURF ZONE *
*5, VISITS ESTUARIES 7, COMM, NEAR RIGS *

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
FRINGED FLOUNDER **ETROPUS CROSSOTUS**	RARE	X	X		X							COASTAL WATERS	NORTH CAROLINA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SOUTHERN FLOUNDER **PARALICHTHYS LETHOSTIGMA**	COMMON	X	X		X							COASTAL WATERS	NEW YORK TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SOLEIDAE (SOLES)															
LINED SOLE **ACHIRUS LINEATUS**	UNCOMMON	X	X									COASTAL WATERS	FLORIDA TO MEXICO.	TEMPORARY TURBIDITY	
HOGCHOKER **TRINECTES MACULATUS**	ABUNDANT		X		X							COASTAL WATERS, ENTERS FRESHWATER	CAPE ANN, MASSACHUSETTS TO PANAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CYNOGLOSSIDAE (TONGUEFISHES)															
BLACKCHEEK TONGUEFISH **SYMPHURUS PLAGIUSA**	RARE	X	X		X							COASTAL WATERS	NEW YORK TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
TETRAODONTIDAE (PUFFERS)															
SOUTHERN PUFFER **SPHOEROIDES NEPHELUS**	RARE		X		X							COASTAL WATERS	NORTH CAROLINA TO PANAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1. LARGE RIVERS	6. BORROW PITS
2. SM. RIVERS, LG. CREEKS	7. OXBOWS
3. STREAMS	8. SWAMPS
4. BACKWATERS	9. PONDS
5. BAYOUS	10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
ACIPENSERIDAE (STURGEONS)															
PALLID STURGEON SCAPHIRHYNCHUS ALBUS	RARE	X										NORTHEAST CORNER	MISSISSIPPI RIVER AND LARGER TRIBUTARIES FROM DAKOTAS TO LOUISIANA	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SHOVELNOSE STURGEON SCAPHIRHYNCHUS PLATORYNCHUS	RARE	X										NORTHERN HALF	MISSISSIPPI RIVER AND LARGER TRIBUTARIES, ALSO RIO GRANDE IN N.M.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
POLYODONTIDAE (PADDLEFISHES)															
PADDLEFISH POLYODON SPATHULA	RARE	X	X	X							X	THROUGHOUT	MISSISSIPPI RIVER AND LARGER TRIBUTARIES, ALSO GREAT LAKES.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
LEPISOSTEIDAE (GARS)															
SPOTTED GAR LEPISOSTEUS OCULATUS	ABUNDANT	X	X	X	X	X		X	X	X	X	THROUGHOUT	MISSIPPI RIVER FROM GREAT LAKES TO GULF AND FROM CENT. TEX. TO W. FLA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
LONGNOSE GAR LEPISOSTEUS OSSEUS	RARE	X	X	X	X	X		X		X	X	THROUGHOUT	VERMONT TO MINNESOTA AND SOUTH TO GULF FROM FLORIDA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SHORTNOSE GAR LEPISOSTEUS PLATOSTOMUS	COMMON	X	X		X	X	X	X				THROUGHOUT	GREAT LAKES AND MISSISSIPPI RIVER AND LARGER TRIBUTARIES.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ALLIGATOR GAR LEPISOSTEUS SPATULA	ABUNDANT	X	X		X	X		X	X	X	X	THROUGHOUT	MISSISSIPPI RIVER AND LARGER TRIBUTARIES FROM ST. LOUIS TO GULF. ALSO IN COASTAL RIVERS FROM FLA. TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
AMIIDAE (BOWFINS)															

1. LARGE RIVERS	6. BORROW PITS
2. SM. RIVERS, LG. CREEKS	7. OXBOWS
3. STREAMS	8. SWAMPS
4. BACKWATERS	9. PONDS
5. BAYOUS	10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
		GENERAL HABITAT													
BOWFIN **AMIA CALVA**	ABUNDANT	X	X		X	X	X	X	X	X	X	THROUGHOUT	ST. LAWRENCE DRAINAGE TO MINNESOTA AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CLUPEIDAE (HERRINGS)															
SKIPJACK HERRING **ALOSA CHRYSOCHLORIS**	RARE ANADROMOUS	X	X									THROUGHOUT	FLORIDA TO TEXAS IN GULF, ENTERING STREAMS AND RIVERS. IN MISS. RIVER AND TRIBS. N. TO MINNESOTA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
GIZZARD SHAD **DOROSOMA CEPEDIANUM**	COMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	MINNESOTA TO ST. LAWRENCE R. AND NEW JERSEY SOUTH TO THE GULF AND MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
THREADFIN SHAD **DOROSOMA PETENENSE**	COMMON	X	X		X	X	X	X	X	X	X	THROUGHOUT		MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
ESOCIDAE (PIKES)															
REDFIN PICKEREL **ESOX AMERICANUS**	RARE	X	X	X	X	X	X	X			X	THROUGHOUT	MAINE TO TEXAS ON ATLANTIC COASTAL PLAIN. IOWA THROUGH OHIO VALLEY AND SOUTH.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CHAIN PICKEREL **ESOX NIGER**	RARE				X		X	X	X	X		THROUGHOUT	EAST OF APPALACHIANS FROM NEW BRUNSWICK SOUTH TO FLORIDA. MISS. VALLEY N. TO MO. AND FROM ALA. TO TEX	NO SIGNIFICANT CHANGE	
CYPRINIDAE (MINNOWS AND CARPS)															
SPECKLED CHUB **HYBOPSIS AESTIVALIS**	RARE	X	X									THROUGHOUT EXCEPT E. COASTAL MARSHES	COASTAL RIVERS AND TRIBUTARIES. FLORIDA TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BIGEYE CHUB **HYBOPSIS AMBLOPS**	RARE	X	X									THROUGHOUT	NEW YORK TO IOWA AND SOUTH TO OKLA., LOUISIANA AND W. FLORIDA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

FRESHWATER FISH

1, LARGE RIVERS	6, BORROW PITS
2, SM, RIVERS, LG, CREEKS	7, OXBOWS
3, STREAMS	8, SWAMPS
4, BACKWATERS	9, PONDS
5, BAYOUS	10, LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
SILVER CHUB **HYBOPSIS STORERIANA**	RARE	X			X							THROUGHOUT EXCEPT S W CORNER	NEW YORK TO WYOMING SOUTH TO OKLAHOMA AND ALABAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
GOLDEN SHINER **NOTEMIGONUS CRYSOLEUCAS**	UNCOMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	CENTRAL AND EASTERN U.S. EAST OF ROCKIES AND FROM CANADA TO GULF.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PALLID SHINER **NOTROPIS AMNIS**	RARE	X	X									NORTHERN HALF	WISCONSIN AND MINNESOTA SOUTH IN MISSISSIPPI VALLEY TO E. TEX. AND LA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
EMERALD SHINER **NOTROPIS ATHERINOIDES**	RARE	X	X		X			X				THROUGHOUT EXCEPT COASTAL MARSHES	S. CANADA AND GT. LAKES SOUTH IN MISSISSIPPI VALLEY TO GULF FROM TEXAS TO FLORIDA	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
PUGNOSE MINNOW **NOTROPIS EMILIAE**	RARE	X	X	X	X	X	X	X	X	X	X	THROUGHOUT EXCEPT COASTAL MARSHES	MINNESOTA AND MICHIGAN SOUTH TO TEX., FLORIDA AND S. CAROLINA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
WEED SHINER **NOTROPIS TEXANUS**	COMMON	X	X	X	X		X	X				THROUGHOUT EXCEPT COASTAL MARSHES	MICHIGAN S.W. TO IOWA AND SOUTH IN MISS. VALLEY TO E. TEX. AND GEORGIA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BLACKTAIL SHINER **NOTROPIS VENUSTUS**	COMMON	X	X	X	X	X	X	X		X	X	THROUGHOUT EXCEPT COASTAL MARSHES	ILLINOIS TO OKLAHOMA SOUTH TO GULF FROM TEXAS TO FLORIDA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
MIMIC SHINER NOTROPIS VOLUCELLUS	RARE	X	X	X	X	X	X	X	X	X	X	THROUGHOUT EXCEPT COASTAL MARSHES	NOVA SCOTIA TO MINNESOTA AND SOUTH TO GULF FROM TEXAS TO FLORIDA, ON ATLANTIC COAST FROM VIRGINIA TO FLA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

FRESHWATER FISH

*1, LARGE RIVERS 6, BORROW PITS *
*2, SM, RIVERS, LG, CREEKS 7, OXBOWS *
*3, STREAMS 8, SWAMPS *
*4, BACKWATERS 9, PONDS *
*5, BAYOUS 10, LAKES AND IMPOUNDMENTS *

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
BULLHEAD MINNOW PIMEPHALES VIGILAX	COMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT EXCEPT COASTAL MARSHES	MISS, VALLEY FROM MINN, TO GULF AND ALSO PENN, TO ALABAMA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CATOSTOMIDAE (SUCKERS)															
RIVER CARPSUCKER CARPIODES CARPIO	COMMON	X	X					X		X	X	THROUGHOUT	PENNSYLVANIA TO MONTANA AND SOUTH IN MISSISSIPPI VALLEY TO TEX AND ALA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CREEK CHUBSUCKER ERIMYZON OBLONGUS	COMMON	X	X	X	X							THROUGHOUT	MAINE TO WISCONSIN AND SOUTH TO TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
LAKE CHUBSUCKER ERIMYZON SUCETTA	UNCOMMON		X		X	X	X	X		X	X	THROUGHOUT	MAINE TO MINNESOTA AND SOUTH TO TEXAS AND FLORIDA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SMALLMOUTH BUFFALO ICTIOBUS BUBALUS	UNCOMMON	X	X	X	X	X		X		X	X	THROUGHOUT	MICHIGAN TO MINNESOTA AND SOUTH TO MEXICO AND FLORIDA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BIGMOUTH BUFFALO ICTIOBUS CYPRINELLUS	UNCOMMON	X	X			X		X			X	THROUGHOUT	LAKE ERIE TO N, DAKOTA AND SOUTH TO TEXAS AND ALABAMA, INTROD, IN ARIZ,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BLACK BUFFALO ICTIOBUS NIGER	UNCOMMON	X				X		X				THROUGHOUT	LAKE ERIE TO NEBRASKA AND SOUTH TO TEXAS AND FLORIDA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
SPOTTED SUCKER MINYTREMA MELANOPS	UNCOMMON	X	X	X	X	X		X			X	THROUGHOUT	PENNSYLVANIA TO MINNESOTA AND TEXAS TO FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BLACKTAIL REDHORSE MOXOSTOMA POECILURUM	UNCOMMON		X	X							X	THROUGHOUT	GULF DRAINAGE TEXAS TO GEORGIA,	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1. LARGE RIVERS
2. SM. RIVERS, LG. CREEKS
3. STREAMS
4. BACKWATERS
5. BAYOUS
6. BORROW PITS
7. OXBOWS
8. SWAMPS
9. PONDS
10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
ICTALURIDAE (CATFISHES)															
BLUE CATFISH ICTALURUS FURCATUS	COMMON	X	X		X	X	X	X			X	THROUGHOUT	MISSISSIPPI VALLEY FROM MINNESOTA SOUTH TO GULF AND WEST TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BLACK BULLHEAD ICTALURUS MELAS	ABUNDANT	X	X	X	X	X	X	X		X	X	THROUGHOUT	NOVA SCOTIA TO ROCKIES AND SOUTH TO MEXICO IN MISS. VALLEY. ALSO IN. WESTERN STATES AND CONN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
YELLOW BULLHEAD ICTALURUS NATALIS	RARE		X	X	X	X	X	X	X	X	X	THROUGHOUT	THROUGHOUT NORTH AMERICA EAST OF ROCKIES	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CHANNEL CATFISH ICTALURUS PUNCTATUS	COMMON	X	X		X	X	X	X		X	X	THROUGHOUT	ORIGINALLY WIDESPREAD IN MISS. DRAINAGE. INTROD. ON ATL. AND PAC. COASTS SO IS NOW THROUGHT U.S.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
TADPOLE MADTOM NOTURUS GYRINUS	RARE				X	X	X	X		X	X	THROUGHOUT EXCEPT COASTAL MARSHES	QUEBEC TO N. DAKOTA SOUTH TO TEXAS AND FLORIDA, NOT IN MTNS.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
FRECKLED MADTOM NOTURUS NOCTURNUS	RARE		X	X								THROUGHOUT EXCEPT COASTAL MARSHES	CENT. AND LOWER MISS. DRAINAGE AND GULF COAST DRAINAGE TEX. TO ALABAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
FLATHEAD CATFISH PYLODICTIS OLEVARIS	UNCOMMON	X	X								X	THROUGHOUT	PENNSYLVANIA TO S. DAKOTA AND SOUTH TO MEXICO AND ALABAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
APHREDODERIDAE (PIRATE PERCHES)															
PIRATE PERCH APHREDODERUS SAYANUS	COMMON		X		X	X	X	X	X	X		THROUGHOUT	MISS. VALLEY FROM MINN. TO GULF. ALSO ON ATL. SLOPE FROM N.Y. TO FLA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1, LARGE RIVERS
2, SM, RIVERS, LG, CREEKS
3, STREAMS
4, BACKWATERS
5, BAYOUS
6, BORROW PITS
7, OXBOWS
8, SWAMPS
9, PONDS
10, LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
CYPRINODONTIDAE (KILLIFISHES)														
GOLDEN TOPMINNOW FUNDULUS CHRYSOTUS	ABUNDANT				X		X	X	X	X	X	THROUGHOUT	TENNESSEE TO MISSOURI AND SOUTH TO TEXAS AND S, CAROLINA,	MINOR HABITAT ELIMINATION TEMPORARY TURBIDITY
BLACKSTRIPE TOPMINNOW FUNDULUS NOTATUS	RARE		X		X	X	X	X	X			THROUGHOUT	MICHIGAN TO IOWA AND SOUTH TO CENT, TEXAS AND ALABAMA,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
STARHEAD TOPMINNOW FUNDULUS NOTTI	RARE				X	X	X	X	X	X		THROUGHOUT	S, CAROLINA TO IOWA AND SOUTH TO TEXAS AND FLORIDA,	NO SIGNIFICANT CHANGE
BLACKSPOTTED TOPMINNOW FUNDULUS OLIVACEUS	RARE		X	X	X	X	X	X	X	X		THROUGHOUT	KENTUCKY TO OKLAHOMA AND SOUTH TO EASTERN TEXAS AND FLORIDA,	MINOR HABITAT ALTERATION TEMPORARY TURBIDITY
POECILIIDAE (LIVEBEARERS)														
MOSQUITOFISH GAMBUSIA AFFINIS	ABUNDANT	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	MISS, VALLEY FROM ILLINOIS SOUTH TO GULF, ALSO N.J, TO FLA, INTROD, WIDELY,	MINOR HABITAT ELIMINATION TEMPORARY TURBIDITY
LEAST KILLIFISH HETERANDRIA FORMOSA	ABUNDANT				X	X	X	X	X	X	X	SOUTHERN THIRD	COASTAL AREAS FROM S, CAROLINA TO LOUISIANA,	MINOR HABITAT ELIMINATION TEMPORARY TURBIDITY
SAILFIN MOLLY POECILIA LATIPINNA	ABUNDANT			X	X	X	X	X	X	X	X	SOUTHERN THIRD	SOUTH CAROLINA TO MEXICO ON COAST	MINOR HABITAT ELIMINATION TEMPORARY TURBIDITY
ATHERINIDAE (SILVERSIDES)														
BROOK SILVERSIDES LABIDESTHES SICCULUS	COMMON		X	X	X	X	X	X		X	X	THROUGHOUT	NOVA SCOTIA TO MINNESOTA SOUTH TO TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION TEMPORARY TURBIDITY

1. LARGE RIVERS
2. SM. RIVERS, LG. CREEKS
3. STREAMS
4. BACKWATERS
5. BAYOUS
6. BORROW PITS
7. OXBOWS
8. SWAMPS
9. PONDS
10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
PERCICHTHYIDAE (TEMPERATE BASSES)															
YELLOW BASS MORONE MISSISSIPPIENSIS	COMMON	X	X		X			X		X	X	THROUGHOUT	MINNESOTA TO INDIANA AND SOUTH TO EAST TEXAS AND ALABAMA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
STRIPED BASS MORONE SAXATILIS	RARE	X									X	THROUGHOUT	ATLANTIC DRAINAGE, NEW BRUNSWICK TO FLORIDA, ALSO GULF DRAINAGE, WIDELY INTRODUCED ELSEWHERE	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
CENTRARCHIDAE (SUNFISHES)															
FLIER CENTRARCHUS MACROPTERUS	UNCOMMON				X	X				X	X	THROUGHOUT	VIRGINIA TO ILLINOIS AND SOUTH TO EAST TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BANDED PYGMY SUNFISH ELASSOMA ZONATUM	COMMON		X	X	X	X	X			X		THROUGHOUT	NORTH CAROLINA TO ILLINOIS AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GREEN SUNFISH LEPOMIS CYANELLUS	COMMON				X	X	X	X	X	X		THROUGHOUT	NEW YORK TO N. DAKOTA SOUTH TO MEXICO AND FLORIDA, WIDELY INTROD. ELSEWHERE	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
WARMOUTH LEPOMIS GULOSUS	UNCOMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	NEW YORK TO WISCONSIN AND SOUTH TO MEXICO AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
ORANGESPOTTED SUNFISH LEPOMIS HUMILIS	UNCOMMON				X	X	X	X	X	X	X	THROUGHOUT	LAKE ERIE TO NORTH DAKOTA AND SOUTH TO WEST TEXAS AND ALABAMA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BLUEGILL LEPOMIS MACROCHIRUS	ABUNDANT		X	X	X	X	X	X	X	X	X	THROUGHOUT	NEW YORK TO MINNESOTA AND SOUTH TO TEXAS AND FLORIDA. INTROD. ELSEWHERE.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1. LARGE RIVERS	6. BORROW PITS
2. SM. RIVERS, LG. CREEKS	7. OXBOWS
3. STREAMS	8. SWAMPS
4. BACKWATERS	9. PONDS
5. BAYOUS	10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
DOLLAR SUNFISH **LEPOMIS MARGINATUS**	UNCOMMON				X	X	X	X	X	X	X	THROUGHOUT	MISS. VALLEY FROM TENN. TO OKLA AND SOUTH TO TEX. AND FLAORIDA AND ALSO NORTH TO S. CAROLINA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
LONGEAR SUNFISH **LEPOMIS MEGALOTIS**	UNCOMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	PENNSYLVANIA TO MINNESOTA AND SOUTH TO TEXAS AND S. CAROLINA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
REDEAR SUNFISH **LEPOMIS MICROLOPHUS**	ABUNDANT		X	X	X	X	X	X	X	X	X	THROUGHOUT	INDIANA TO MISSOURI AND SOUTH TO TEXAS AND FLORIDA. WIDELY INTRODUCED.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SPOTTED SUNFISH **LEPOMIS PUNCTATUS**	COMMON	X	X	X	X	X	X	X	X	X	X	THROUGHOUT	INDIANA TO MISSOURI AND SOUTH TO TEXAS AND N. CAROLINA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
BANTAM SUNFISH **LEPOMIS SYMMETRICUS**	UNCOMMON			X	X	X				X	X	THROUGHOUT	MISS. VALLEY FROM ILLINOIS SOUTH TO TEXAS AND LOUISIANA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SPOTTED BASS **MICROPTERUS PUNCTULATUS**	UNCOMMON		X	X								THROUGHOUT	OHIO TO KANSAS AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY
LARGEMOUTH BASS **MICROPTERUS SALMOIDES**	COMMON		X	X	X	X	X	X		X	X	THROUGHOUT	NOVA SCOTIA TO MINNESOTA AND SOUTH TO AND SOUTH TO MEXICO AND FLORIDA. ATL. COAST, FLA. TO VIR. WIDELY INTRO.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
WHITE CRAPPIE **POMOXIS ANNULARIS**	UNCOMMON	X	X		X	X	X	X	X	X	X	THROUGHOUT	NEW YORK TO NEBRASKA AND SOUTH TO TEXAS AND FLORIDA. ALSO NORTH ON COAST TO N. CAR. WIDELY INTRODUCED.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
BLACK CRAPPIE **POMOXIS NIGROMACULATUS**	UNCOMMON	X	X		X	X	X	X	X	X	X	THROUGHOUT	NEW YORK TO N. DAKOTA AND S. CANADA AND SOUTH TO TEXAS AND FLORIDA. ALSO N. ON COAST TO VIR. WIDELY INTROD.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PERCIDAE (PERCHES)															

1. LARGE RIVERS
2. SM. RIVERS, LG. CREEKS
3. STREAMS
4. BACKWATERS
5. BAYOUS
6. BORROW PITS
7. OXBOWS
8. SWAMPS
9. PONDS
10. LAKES AND IMPOUNDMENTS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
CYPRESS DARTER ETHEOSTOMA PROELIARE	RARE		X		X	X	X	X	X	X	X	THROUGHOUT EXCEPT COASTAL MARSHES	ILLINOIS TO MISSOURI AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SCIAENIDAE (DRUMS)															
FRESHWATER DRUM APLODINOTUS GRUNNIENS	ABUNDANT	X	X		X	X	X	X		X	X	THROUGHOUT	CANADA SOUTH IN MISSISSIPPI DRAINAGE TO MEXICO.	MINOR HABITAT ALTERATION	TEMPORARY TURBIDITY

1, STREAMS AND RIVERS 6, WOODS
2, LAKES AND PONDS 7, BRUSH
3, FRESH MARSH 8, FIELDS
4, SALT MARSH OR SEA 9, ARBOREAL
5, SWAMP 10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
PROTEIDAE (WATERDOGS AND MUDPUPPIES)														
WATERDOG NECTURUS BEYERI	RARE	X										SOUTHERN HALF	W, GEORGIA TO E, TEXAS, ALSO FLORIDA PANHANDLE,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
SIRENIDAE (SIRENS)														
LESSER SIREN SIREN INTERMEDIA	COMMON	X	X	X		X	X		X			THROUGHOUT	S, CAROLINA TO E, TEXAS AND UP MISSISSIPPI VALLEY TO ILLINOIS AND INDIANA,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY
AMPHIUMIDAE (AMPHIUMAS)														
THREE-TOED AMPHIUMA AMPHIUMA TRIDACTYLUM	COMMON	X	X	X		X	X		X			THROUGHOUT EXCEPT FLORIDA PARISHES	MISS, VALLEY CAIRO TO GULF, ALSO E, TEX,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY
AMBYSTOMIDAE (MOLE SALAMANDERS)														
SMALL-MOUTHED SALAMANDER AMBYSTOMA TEXANUM	UNCOMMON	X	X				X		X			THROUGHOUT	OHIO TO S, IOWA AND SOUTH TO CENT, TEXAS AND MISSISSIPPI,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY
MOLE SALAMANDER AMBYSTOMA TALPOIDEUM	RARE		X									THROUGHOUT EXCEPT S W CORNER AND EXTREME N,	S, CAROLINA TO LOUISIANA, DISJUNCT POPULATIONS IN N, CAR,, TENN,, KY,, ILL,, MO,, AND OKLA,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
MARBLED SALAMANDER AMBYSTOMA OPACUM	COMMON	X	X				X					THROUGHOUT	RHODE ISLAND TO MISSOURI AND SOUTH TO EAST TEXAS AND N, FLORIDA,	MINOR HABITAT ALTERATION; TEMPORARY TURBIDITY
SPOTTED SALAMANDER AMBYSTOMA MACULATUM	UNCOMMON	X	X	X		X	X		X			THROUGHOUT EXCEPT S W CORNER	NOVA SCOTIA TO ONTARIO AND SOUTH TO E, TEXAS AND CENT, GEORGIA,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY

1, STREAMS AND RIVERS	6, WOODS
2, LAKES AND PONDS	7, BRUSH
3, FRESH MARSH	8, FIELDS
4, SALT MARSH OR SEA	9, ARBOREAL
5, SWAMP	10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
SALAMANDRIDAE (NEWTS)															
NEWT **DIEMICTYLUS VIRIDESCENS**	COMMON	X	X			X	X		X			THROUGHOUT	NOVA SCOTIA TO MINNESOTA AND SOUTH TO CENT, TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PLETHODONTIDAE (LUNGLESS SALAMANDERS)															
DUSKY SALAMANDER **DESMOGNATHUS FUSCUS**	UNCOMMON	X				X	X					THROUGHOUT	NOVA SCOTIA TO S, ILLINOIS AND S,E, OKLAHOMA SOUTH TO E, TEXAS AND N, FLA, EXCEPT ON COASTAL PLAIN S, OF VA	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
DWARF SALAMANDER **MANCULUS QUADRIDIGITATUS**	UNCOMMON					X	X					THROUGHOUT EXCEPT EXTREME N,W, CORNER	N, CAROLINA TO E, TEXAS ALONG COASTAL PLAIN,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PELOBATIDAE (SPADEFOOT TOADS)															
EASTERN SPADEFOOT **SCAPHIOPUS HOLBROOKI**	UNCOMMON						X		X			EASTERN HALF	MASSACHUSETTS TO S,E, MISSOURI AND SOUTH TO CENT, LOUISIANA AND FLORIDA,	MINOR HABITAT ELIMINATION	
BUFONIDAE (TOADS)															
WOODHOUSE'S TOAD **BUFO WOODHOUSEI**	# COMMON	X	X			X	X		X			THROUGHOUT	NEW HAMPSHIRE TO WASHINGTON AND SOUTH TO ARIZONA AND FLORIDA PANHANDLE,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GULF COAST TOAD **BUFO VALLICEPS**	# ABUNDANT	X	X	X		X	X		X		X	SOUTHERN HALF	SOUTHERN LOUISIANA AND SOUTHERN TEXAS	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
HYLIDAE (TREEFROGS)															

1, STREAMS AND RIVERS	6, WOODS
2, LAKES AND PONDS	7, BRUSH
3, FRESH MARSH	8, FIELDS
4, SALT MARSH OR SEA	9, ARBOREAL
5, SWAMP	10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
NORTHERN CRICKET FROG **ACRIS CREPITANS**	COMMON	X	X	X		X	X		X			THROUGHOUT	NEW JERSEY TO COLORADO AND SOUTH TO TEXAS AND FLORIDA PANHANDLE, ABSENT FROM SOUTH ATLANTIC COASTAL PLAIN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
SPRING PEEPER **HYLA CRUCIFER**	COMMON		X			X	X	X		X		THROUGHOUT	NOVA SCOTIA TO MANITOBA AND SOUTH TO E. TEXAS AND N. FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GREEN TREEFROG **HYLA CINEREA**	# COMMON	X	X			X	X		X	X	X	THROUGHOUT	NEW JERSEY TO CENT. TEXAS ON COASTAL PLAIN AND UP MISS. VALLEY TO S. ILL.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
GRAY TREEFROG **HYLA VERSICOLOR**	# COMMON	X	X			X	X		X	X		THROUGHOUT	MAINE TO S.E. MANITOBA AND SOUTH TO OKLA. AND N. FLA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CHORUS FROG **PSEUDACRIS TRISERIATA**	COMMON	X	X	X		X	X		X	X		THROUGHOUT	PENN. TO MONT. AND SOUTH TO N. NEW MEX., E. TEX. AND CENT. GA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MICROHYLIDAE (NARROW-MOUTHED TOADS)															
EASTERN NARROW-MOUTHED TOAD **GASTROPHRYNE CAROLINENSIS**	# ABUNDANT	X	X	X		X	X		X		X	THROUGHOUT	MARYLAND TO OKLAHOMA AND SOUTH TO CENTRAL TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
RANIDAE (TRUE FROGS)															
BULLFROG **RANA CATESBEIANA**	ABUNDANT	X	X	X		X	X		X			THROUGHOUT	NOVA SCOTIA TO WISCONSIN AND S. D	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PIG FROG **RANA GRYLIO**	COMMON	X	X	X		X	X		X			SOUTHERN THIRD	S. CAROLINA TO E. TEXAS ON COASTAL PLAIN.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, STREAMS AND RIVERS	6, WOODS
2, LAKES AND PONDS	7, BRUSH
3, FRESH MARSH	8, FIELDS
4, SALT MARSH OR SEA	9, ARBOREAL
5, SWAMP	10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
GREEN OR BRONZE FROG **RANA CLAMITANS**	# ABUNDANT	X	X	X		X	X		X			THROUGHOUT	N, CAROLINA TO S,E, OKLAHOMA AND SOUTH TO E, TEXAS AND N, FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
LEOPARD FROG **RANA PIPIENS**	# ABUNDANT	X	X	X		X	X		X			THROUGHOUT	NOVA SCOTIA TO BRITISH COLUMBIA AND SOUTH TO S,E, CALIFORNIA AND FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CROCODYLIDAE (ALLIGATORS)															
AMERICAN ALLIGATOR **ALLIGATOR MISSISSIPIENSIS**	# COMMON	X	X	X	X	X						THROUGHOUT	N, CAR, TO CORPUS CHRISTI, TEX, NORTH IN MISS, DRAINAGE TO ARK, AND SE OKLA, FORMERLY TO RIO GRAND IN TEX,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CHELYDRIDAE (MUD AND SNAPPING TURTLES)															
COMMON SNAPPING TURTLE **CHELYDRA SERPENTINA**	COMMON	X	X	X		X			X			THROUGHOUT	S, CAR, TO GULF; ROCKY MTNS, TO ATLANTIC OCEAN,	MODERATE HABITAT ALTERATION	TEMPORARY TURBIDITY
ALLIGATOR SNAPPING TURTLE **MACROCLEMYS TEMMINCKI**	COMMON	X	X	X								THROUGHOUT	KAN, TO IND, AND SOUTH TO E, TEX, AND N, FLA,	MODERATE HABITAT ALTERATION	TEMPORARY TURBIDITY
STINKPOT **STERNOTHAERUS ODORATUS**	ABUNDANT	X	X	X		X	X		X			THROUGHOUT	NEW ENG, TO WISC, SOUTH TO TEX, AND FLA,	MODERATE HABITAT ALTERATION	TEMPORARY TURBIDITY
KEEL-BACKED MUSK TURTLE **STERNOTHAERUS CARINATUS**	COMMON	X	X	X		X						THROUGHOUT	ARK, AND SE OKLA, SOUTH TO CENT TEX, AND MISS,	MODERATE HABITAT ALTERATION	TEMPORARY TURBIDITY
COMMON MUD TURTLE **KINOSTERNON SUBRUBRUM**	ABUNDANT	X	X	X		X			X			THROUGHOUT	NEW YORK TO OKLA, SOUTH TO TEXAS AND FLORIDA,	MODERATE HABITAT ALTERATION	TEMPORARY TURBIDITY

REPTILES AND AMPHIBIANS

- 1, STREAMS AND RIVERS — 6, WOODS
- 2, LAKES AND PONDS — 7, BRUSH
- 3, FRESH MARSH — 8, FIELDS
- 4, SALT MARSH OR SEA — 9, ARBOREAL
- 5, SWAMP — 10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
TESTUDINIDAE (HARD-SHELLED TURTLES)															
BOX TURTLE TERRAPENE CAROLINA	COMMON	X	X				X	X	X			THROUGHOUT	MAINE TO KANSAS AND SOUTH TO EAST TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
ORNATE BOX TURTLE TERRAPENE ORNATA	UNCOMMON						X	X				WESTERN HALF	INDIANA TO WYOMING AND SOUTH TO ARIZONA AND LOUISIANA	MINOR HABITAT ELIMINATION	
DIAMONDBACK TERRAPIN MALACLEMYS TERRAPIN	UNCOMMON			X	X							COASTAL AREAS	MASSACHUSETTS TO TEXAS, ON COAST,	MINOR HABITAT ELIMINATION	
MISSISSIPPI MAP TURTLE GRAPTEMYS KOHNI	COMMON	X	X			X	X		X			THROUGHOUT EXCEPT FLORIDA PARISHES	LOWER MISSISSIPPI VALLEY	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
FALSE MAP TURTLE GRAPTEMYS PSEUDOGEOGRAPHICA	RARE	X	X									WESTERN HALF	WISCONSIN TO NEBRASKA AND SOUTH TO E, TEXAS AND E, TENNESSEE	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
PAINTED TURTLE CHRYSEMYS PICTA	COMMON	X	X	X		X	X		X			EAST OF MISS RIVER AND ATCH RIVER	MAINE TO WASHINGTON SOUTH TO KANSAS AND NORTH CAROLINA, ALSO IN LOWER MISSISSIPPI VALLEY,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
POND SLIDER CHRYSEMYS SCRIPTA	ABUNDANT	X	X	X		X	X		X			THROUGHOUT	NORTH CAROLINA TO NEW MEXICO AND UP MISSISSIPPI VALLEY TO KANSAS AND INDIANA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
RIVER COOTER CHRYSEMYS CONCINNA	COMMON	X			X							THROUGHOUT	NORTH CAROLINA TO KANSAS AND SOUTH TO TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, STREAMS AND RIVERS	6, WOODS
2, LAKES AND PONDS	7, BRUSH
3, FRESH MARSH	8, FIELDS
4, SALT MARSH OR SEA	9, ARBOREAL
5, SWAMP	10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
COOTER CHRYSEMYS FLORIDANA	COMMON	X	X	X		X			X			THROUGHOUT	COASTAL PLAIN VIRGINIA TO E. TEXAS AND UP MISS. VALLEY TO NEB. AND ILL.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CHICKEN TURTLE DEIROCHELYS RETICULARIA	UNCOMMON	X	X	X								THROUGHOUT	NORTH CAROLINA TO EAST TEXAS ON COASTAL PLAIN; UP MISS. VALLEY TO OKLA. AND MISSOURI	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
CHELONIIDAE (SEA TURTLES)															
ATLANTIC GREEN TURTLE CHELONIA MYDAS	RARE											COASTAL WATERS	MASSACHUSETTS TO ARGENTINA, MOSTLY IN SHALLOW WATERS.	NO SIGNIFICANT CHANGE	
HAWKSBILL TURTLE ERETMOCHELYS IMBRICATA	RARE				X							COASTAL WATERS	MASSACHUSETTS TO BRAZIL AND NEAR HAWII, ESPECIALLY IN SHALLOW WATERS.	NO SIGNIFICANT CHANGE	
LOGGERHEAD TURTLE CARETTA CARETTA	RARE				X							COASTAL WATERS	NEWFOUNDLAND TO ARGENTINA AND CALIF. BOTH OFFSHORE AND INSHORE.	NO SIGNIFICANT CHANGE	
ATLANTIC RIDLEY LEPIDOCHELYS KEMPI	RARE				X							COASTAL WATERS	NEWFOUNDLAND TO GULF OF MEXICO.	NO SIGNIFICANT CHANGE	
DERMOCHELYIDAE (LEATHERBACK TURTLES)															
LEATHERBACK DERMOCHELYS CORIACEA	RARE				X							COASTAL WATERS	NEWFOUNDLAND TO ARGENTINA, BRITISH COLUMBIA TO CHILE, INSHORE AND OFFSHORE.	NO SIGNIFICANT CHANGE	
TRIONYCHIDAE (SOFTSHELL TURTLES)															
SPINY SOFTSHELL TRIONYX SPINIFER	COMMON	X	X	X		X			X			THROUGHOUT	VERMONT TO MONTANA SOUTH TO S. CALIF. AND N. CAR. ABSENT FROM COASTAL PLAIN N. OF N. CAR.	MINOR HABITAT ELIMINATION	TEMPORARY TURBIDITY

1, STREAMS AND RIVERS
2, LAKES AND PONDS
3, FRESH MARSH
4, SALT MARSH OR SEA
5, SWAMP
6, WOODS
7, BRUSH
8, FIELDS
9, ARBOREAL
10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
SMOOTH SOFTSHELL TRIONYX MUTICUS	UNCOMMON	X	X	X								THROUGHOUT	CENTRAL U, S, FROM PENN, TO S, DAK, AND SOUTH TO E, TEX, AND ALA,	MINOR HABITAT ELIMINATION; TEMPORARY TURBIDITY
IGUANIDAE (IGUANIDS)														
GREEN ANOLE ANOLIS CAROLINENSIS	# ABUNDANT	X	X	X		X	X	X	X	X	X	THROUGHOUT	VIRGINIA TO E, OKLAHOMA AND SOUTH TO EAST TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION
FENCE LIZARD SCELOPORUS UNDULATUS	RARE						X	X	X	X		THROUGHOUT	NEW JERSEY TO KANSAS AND SOUTH TO E, TEXAS AND N, FLORIDA,	MINOR HABITAT ELIMINATION
TEIIDAE (WHIPTAILS)														
SIX-LINED RACERUNNER CNEMIDOPHORUS SEXLINEATUS	RARE						X	X	X			THROUGHOUT	MARYLAND TO COLORADO AND SOUTH TO CENT, TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION
SCINCIDAE (SKINKS)														
GROUND SKINK SCINCELLA LATERALE	# ABUNDANT	X		X		X	X		X			THROUGHOUT	VIRGINIA TO CENTRAL NEBRASKA AND SOUTH TO E, TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION
FIVE-LINED SKINK EUMECES FASCIATUS	# ABUNDANT	X		X		X	X	X	X	X		THROUGHOUT	NEW YORK TO WISCONSIN AND SOUTH TO CENTRAL TEXAS AND GEORGIA,	MINOR HABITAT ELIMINATION
BROAD-HEADED SKINK EUMECES LATICEPS	# COMMON					X	X	X		X	X	THROUGHOUT	MARYLAND TO KANSAS AND SOUTH TO EAST TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION
ANGUIDAE (LATERAL FOLD LIZARDS)														

1. STREAMS AND RIVERS 6. WOODS
2. LAKES AND PONDS 7. BRUSH
3. FRESH MARSH 8. FIELDS
4. SALT MARSH OR SEA 9. ARBOREAL
5. SWAMP 10. BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
SLENDER GLASS LIZARD OPHISAURUS ATTENUATUS	COMMON						X	X	X			THROUGHOUT	VIRGINIA TO WISCONSIN AND NEBRASKA AND SOUTH TO EAST TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
COLUBRIDAE (COLUBRIDS)														
BANDED WATER SNAKE NATRIX FASCIATA	# ABUNDANT	X	X	X	X	X	X		X			THROUGHOUT	COASTAL PLAIN VIRGINIA TO EAST TEXAS AND UP MISS. VALLEY TO MISSOURI.	MINOR HABITAT ELIMINATION
GREEN WATER SNAKE NATRIX CYCLOPION	ABUNDANT	X	X	X	X	X	X		X			THROUGHOUT EXCEPT EXTREME N.W. CORNER	LOWER MISSISSIPPI VALLEY AND ALONG COAST FROM CENT. TEXAS TO FLORIDA.	MINOR HABITAT ELIMINATION
DIAMOND-BACKED WATER SNAKE NATRIX RHOMBIFERA	# ABUNDANT	X	X	X		X	X		X			THROUGHOUT	INDIANA TO KANSAS AND SOUTH TO CENT. TEXAS AND W. ALABAMA.	MINOR HABITAT ELIMINATION
PLAIN-BELLIED WATER SNAKE NATRIX ERYTHROGASTER	COMMON	X	X	X		X	X		X			THROUGHOUT	MARYLAND TO TEXAS ON COASTAL PLAIN AND NORTHWARD TO INDIANA AND KANSAS.	MINOR HABITAT ELIMINATION
GRAHAM'S WATER SNAKE REGINA GRAHAMI	# ABUNDANT	X	X	X		X						THROUGHOUT	ILLINOIS TO NEBRASKA AND SOUTH TO CENT. TEXAS AND MISSISSIPPI.	MINOR HABITAT ELIMINATION
GLOSSY WATER SNAKE REGINA RIGIDA	ABUNDANT	X	X	X		X	X		X			THROUGHOUT	SOUTH CAROLINA TO S.E. OKLAHOMA AND SOUTH TO E. TEXAS AND N. FLORIDA.	MINOR HABITAT ELIMINATION
BROWN SNAKE STORERIA DEKAYI	# COMMON			X		X	X	X	X			THROUGHOUT	MAINE TO MINNESOTA AND SOUTH TO CENT. TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
RED-BELLIED SNAKE STORERIA OCCIPITOMACULATA	RARE					X	X					THROUGHOUT EXCEPT SABINE DRAINAGE	NOVA SCOTIA TO MANITOBA AND SOUTH TO LOUISIANA AND N. FLORIDA.	MINOR HABITAT ELIMINATION

1. STREAMS AND RIVERS
2. LAKES AND PONDS
3. FRESH MARSH
4. SALT MARSH OR SEA
5. SWAMP
6. WOODS
7. BRUSH
8. FIELDS
9. ARBOREAL
10. BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
COMMON GARTER SNAKE THAMNOPHIS SIRTALIS	UNCOMMON	X	X	X			X	X	X			THROUGHOUT	NOVA SCOTIA TO E. BRITISH COLUMBIA AND SOUTH TO NEW MEXICO AND FLORIDA.	MINOR HABITAT ELIMINATION
WESTERN RIBBON SNAKE THAMNOPHIS PROXIMUS	# ABUNDANT	X	X	X		X	X		X			THROUGHOUT	INDIANA TO COLORADO AND SOUTH TO NEW MEXICO AND LOUISIANA.	MINOR HABITAT ELIMINATION
ROUGH EARTH SNAKE VIRGINIA STRIATULA	COMMON						X		X			THROUGHOUT	VIRGINIA TO S.E. KANSAS AND SOUTH TO CENTRAL TEXAS AND N. FLORIDA.	MINOR HABITAT ELIMINATION
SMOOTH EARTH SNAKE VIRGINIA VALERIAE	UNCOMMON						X		X		X	THROUGHOUT	NEW JERSEY TO KANSAS AND SOUTH TO CENT. TEXAS AND N. FLORIDA.	MINOR HABITAT ELIMINATION
EASTERN HOGNOSE SNAKE HETERODON PLATYRHINOS	# COMMON			X		X	X		X		X	THROUGHOUT	MASSACHUSETTS TO S. DAKOTA AND SOUTH TO CENT. TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
RINGNECK SNAKE DIADOPHIS PUNCTATUS	UNCOMMON	X				X	X		X			THROUGHOUT	NOVA SCOTIA TO WISCONSIN AND SOUTH TO CENT. TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
RAINBOW SNAKE FARANCIA ERYTROGRAMMA	COMMON					X			X			FLORIDA PARISHES	S. MARYLAND TO E. LOUISIANA ON COASTAL PLAIN.	MINOR HABITAT ELIMINATION
RACER COLUBER CONSTRICTOR	# COMMON		X	X		X	X	X	X	X	X	THROUGHOUT	NOVA SCOTIA TO MONTANA AND SOUTH TO CENT. TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
COACHWHIP MASTICOPHIS FLAGELLUM	UNCOMMON					X	X	X	X			THROUGHOUT	NORTH CAROLINA TO COLORADO AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
ROUGH GREEN SNAKE OPHEODRYS AESTIVUS	ABUNDANT	X	X	X		X	X	X	X	X		THROUGHOUT	NEW JERSEY TO KANSAS AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION

1. STREAMS AND RIVERS
2. LAKES AND PONDS
3. FRESH MARSH
4. SALT MARSH OR SEA
5. SWAMP
6. WOODS
7. BRUSH
8. FIELDS
9. ARBOREAL
10. BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
CORN SNAKE ELAPHE GUTTATA	RARE						X	X	X		X	SOUTH-EASTERN TWO-THIRDS	NEW JERSEY TO UTAH AND SOUTH TO TEXAS AND FLORIDA, NONE IN E. TEX., W. LA. AND E. ARK.	MINOR HABITAT ELIMINATION
RAT SNAKE ELAPHE OBSOLETA	COMMON	X	X	X		X	X	X	X	X		THROUGHOUT	VERMONT TO S.E. MINNESOTA AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
COMMON KING SNAKE LAMPROPELTIS GETULUS	COMMON	X	X	X		X	X	X	X			THROUGHOUT	NEW JERSEY TO NEBRASKA SOUTH TO CALIFORNIA AND FLORIDA.	MINOR HABITAT ELIMINATION
MILK SNAKE LAMPROPELTIS TRIANGULUM	RARE						X	X	X			THROUGHOUT	MAINE TO MONTANA AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
SCARLET SNAKE CEMOPHORA COCCINEA	RARE					X	X	X	X			EASTERN HALF	NEW JERSEY TO OKLAHOMA AND SOUTH TO E. LOUISIANA AND FLORIDA.	MINOR HABITAT ELIMINATION
ELAPIDAE (CORAL SNAKES)														
EASTERN CORAL SNAKE MICRURUS FULVIUS	UNCOMMON		X			X	X	X	X			THROUGHOUT EXCEPT FLORIDA PARISHES	COASTAL PLAIN, N. CAROLINA TO TEXAS.	MINOR HABITAT ELIMINATION
CROTALIDAE (PIT VIPERS)														
COPPERHEAD AGKISTRODON CONTORTRIX	COMMON	X	X	X		X	X		X			THROUGHOUT	MASSACHUSETTS TO NEBRASKA AND SOUTH TO TEXAS AND FLORIDA PANHANDLE.	MINOR HABITAT ELIMINATION
COTTONMOUTH AGKISTRODON PISCIVORUS	ABUNDANT	X	X	X		X	X	X	X			THROUGHOUT	VIRGINIA TO S.E. KANSAS AND SOUTH TO CENT. TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION

1, STREAMS AND RIVERS	6, WOODS
2, LAKES AND PONDS	7, BRUSH
3, FRESH MARSH	8, FIELDS
4, SALT MARSH OR SEA	9, ARBOREAL
5, SWAMP	10, BUILDINGS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
PIGMY RATTLESNAKE SISTRURUS MILIARIUS	UNCOMMON	X	X	X		X	X					THROUGHOUT	N, CAROLINA TO OKLAHOMA AND SOUTH TO EAST TEXAS AND FLORIDA,	MINOR HABITAT ELIMINATION
TIMBER OR CANEBRAKE RATTLESNAKE CROTALUS HORRIDUS	UNCOMMON						X		X			THROUGHOUT	NEW HAMPSHIRE AND NEW YORK TO S,E, NEBRASKA AND SOUTH TO CENT, TEXAS AND N, FLORIDA,	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
GAVIIDAE (LOONS)															
COMMON LOON **GAVIA IMMER**	RARE						X					THROUGHOUT	BREEDS IN NORTHERN STATES AND CANADA, WINTERS ON ALL COASTS OF N. AMERICA.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ALTERATION
PODICIPEDIDAE (GREBES)															
HORNED GREBE **PODICEPS AURITUS**	RARE						X					SOUTHERN HALF	BREEDS IN ALAS. AND NORTHERN STATES; MIGRANT ACROSS N. U.S. AND DOWN CENT. FLYWAY, WINTERS ON COASTS, ALAS. TO S. CAL. AND ME. TO TEX., ALSO IN CENT. US, N. M., TEX., COLO. AND KAN.	WINTER RESIDENT	MINOR HABITAT ALTERATION
EARED GREBE **PODICEPS NIGRICOLLIS**	RARE					X	X					SOUTHWEST PARTS	BREEDS IN WESTERN STATES, WINTERS ON COAST CAN. TO S. AM. AND IN ARIZ., N.M., AND S. TEX. TRANSIENT IN CENT. STATES.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
PIED-BILLED GREBE **PODILYMBUS PODICEPS**	COMMON		X			X	X					THROUGHOUT	PERM. RESIDENT IN WESTERN AND SOUTHERN U.S. BREEDS NORTH TO CENT. CAN; CASUAL IN ALAS.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
PELECANIDAE (PELICANS)															
WHITE PELICAN **PELECANUS ERYTHRORHYNCHOS**	COMMON					X	X		X			COASTAL AREAS	BREEDS LOCALLY NW TERRITORIES TO MANITOBA AND SOUTH TO S. CALIF AND S. DAKOTA, ALSO IN SW TEX. WINTERS IN CALIF. AND ARIZ., ALSO FLA. TO TEX. NEAR COAST. CASUAL IN EASTERN US.	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
SULIDAE (BOOBY FAMILY)															
BLUE-FACED BOOBY **SULA DACTYLATRA**	RARE									X		COASTAL WATERS	BREEDS CARIB., S. ATL. AND BAJA. RANGES PACIF., ATL. (S. CAR. TO FLA.) GULF (FLA. TO MEX.)	SUMMER VISITOR	NO SIGNIFICANT CHANGE

1, UPLAND FOREST
2, BOTTOMLAND FOREST
3, BRUSH
4, FIELDS
5, MARSH
6, BAYS AND/OR PONDS
7, BUILDINGS
8, BEACHES
9, ISLANDS
10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
PHALACROCORACIDAE (CORMORANTS)															
DOUBLE CRESTED CORMORANT PHALACROCORAX AURITUS	COMMON						X					THROUGHOUT	BREEDS ON COASTS, ALAS, TO MEX, AND N, CAR, TO TEX, ALSO IN N, CENT AND NE STATES, WINTERS ALAS, TO CALIF, AND N.Y, TO TEX, ALSO LOWER MISS, VALL., N.M, AND TEX,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ALTERATION
ANHINGIDAE (ANHINGAS)															
ANHINGA ANHINGA ANHINGA	RARE IN WINTER COMMON IN SUMMER		X									THROUGHOUT	BREEDS IN SOUTHEASTERN STATES, WINTERS ON COAST FROM S, CAROLINA TO TEXAS, ACCIDENTAL IN CENTRAL US,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
ARDEIDAE (HERONS ETC.)															
GREAT BLUE HERON ARDEA HERODIAS	# COMMON		X		X	X					X	THROUGHOUT	RESIDENT ON ALL COASTS, WESTERN STATES, MISS, AND OHIO VALLIES, BREEDS IN S, CAN,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GREEN HERON BUTORIDES VIRESCENS	# COMMON		X			X	X					THROUGHOUT	BREEDS ME, TO DAK, AND SOUTH TO TEX, AND FLA, ALSO PAC, COAST AND GT, BASIN, WINTERS ON PAC, COAST, ARIZ, AND S, CAR, TO TEX,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
LITTLE BLUE HERON FLORIDA CAERULEA	# COMMON		X		X	X					X	THROUGHOUT	BREEDS ON COAST MASS, TO TEX, AND UP MISS, VALLEY, WANDERS NORTH AFTER BREEDING, WINTERS ON COAST, S, CAR, TO TEX,	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
CATTLE EGRET BUBULCUS IBIS	# ABUNDANT		X	X	X	X						SOUTHERN HALF	RESIDENT IN COASTAL STATES, MAINE TO TEX, NATURALIZED,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GREAT EGRET CASMERODIUS ALBUS	# COMMON		X		X	X	X				X	THROUGHOUT	BREEDS ORE., IDA., CAL., NEV., MISS, VALL, AND EASTERN STATES, WINTERS ORE., CAL., NEV., N.M., ARIZ., AND ON COAST TEX, TO N, CAR, WANDERS N, AFTER BREEDING,	PERM, RES, IN SOUTH, BREEDS IN NORTH	MINOR HABITAT ELIMINATION

- 1. UPLAND FOREST
- 2. BOTTOMLAND FOREST
- 3. BRUSH
- 4. FIELDS
- 5. MARSH
- 6. BAYS AND/OR PONDS
- 7. BUILDINGS
- 8. BEACHES
- 9. ISLANDS
- 10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
SNOWY EGRET EGRETTA THULA	# COMMON		X		X	X					X	THROUGHOUT	BREEDS ON COAST N.J. TO MEX., ORE. TO CAL. ALSO CENT. VALL. AND GT. BASIN. WANDERS N. AFTER BREEDING. WINTERS CAL. TO TEX. AND ON GULF COAST.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
LOUISIANA HERON HYDRANASSA TRICOLOR	# COMMON		X		X	X					X	COASTAL AREAS	RESIDENT MD. TO TEX. ON COAST. WANDERS N. AFTER BREEDING.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
BLACK-CROWNED NIGHT HERON NYCTICORAX NYCTICORAX	COMMON		X			X						THROUGHOUT	BREEDS THROUGHOUT. WINTERS ON ATL. COAST FROM MASS. SOUTH., IN GT BASIN, AND ON COAST, TEX. TO FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
YELLOW-CROWNED NIGHT HERON NYCTANASSA VIOLACEA	# COMMON		X			X						THROUGHOUT	BREEDS ON COAST, MASS. TO MEX. AND OHIO TO KEN. AND S. TO GULF. WANDERS N. AFTER BREEDING.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
LEAST BITTERN IXOBRYCHUS EXILIS	# COMMON					X						THROUGHOUT	BREEDS E. OF PLAINS AND ORE., UTAH, AND CAL. WINTERS ON GULF COAST, S. CAL. AND ARIZ.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
AMERICAN BITTERN BOTAURUS LENTIGINOSUS	RARE		X			X						THROUGHOUT	BREEDS S. CAN. SOUTH TO S. CAL. AND MD. LOCALLY IN TEX., LA., FLA. WINTERS IN WEST AND ACROSS SOUTH TO DELA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
CICONIIDAE (STORKS)															
WOOD STORK MYCTERIA AMERICANA	RARE		X			X	X					THROUGHOUT	RESIDENT S. CAR. TO MEX. ON COAST.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
THRESKIORNITHIDAE (IBISES)															

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
WHITE-FACED IBIS PLEGADIS CHIHI	COMMON		X		X	X						COASTAL AREAS	BREEDS ORE. TO MINN AND S. TO LA. AND CALIF. WINTERS CENT. CALIF. TO S.W. LA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
WHITE IBIS EUDOCIMUS ALBUS	COMMON		X		X	X						SOUTHERN HALF	RESIDENT ON COAST, S. CAR. TO TEX. WANDERS NORTH IN FALL.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
ROSEATE SPOONBILL AJAIA AJAJA	RARE		X			X				X		SOUTHWEST PARTS	BREEDS S. FLA., TEX. AND LA. WINTERS IN S. TEX. AND S. FLA. AND S.W. LA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
ANATIDAE (SWANS, GEESE AND DUCKS)															
WHISTLING SWAN OLOR COLUMBIANUS	RARE						X					COASTAL AREAS	BREEDS ALAS. AND CAN. WINTERS ON PAC. COAST B.C. TO MEX. AND ON ATL., ME. TO N. CAR. ALSO IN GT. BASIN. OCCAS. IN LA.	WINTER VISITOR	MINOR HABITAT ALTERATION
CANADA GOOSE BRANTA CANADENSIS	RARE				X	X	X				X	COASTAL AREAS	BREEDS IN N. ALAS., CAN. AND N. 1/3 OF U.S. WINTERS SOUTH TO MEX.	WINTER RESIDENT, SOME PERMANENT	MINOR HABITAT ELIMINATION
WHITE-FRONTED GOOSE ANSER ALBIFRONS	RARE				X	X	X					COASTAL AREAS	BREEDS ALAS. AND CAN. MIGRANT ON PAC. COAST AND IN CENT. U.S. WINTERS B.C. TO ILL. AND S. TO MEX. CASUAL ON ATL. COAST IN WINTER.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
SNOW GOOSE CHEN CAERULESCENS	COMMON				X	X	X					THROUGHOUT	BREEDS IN ALAS. AND CAN. MIGRANT THROUGHOUT U.S. WINTERS ON COAST ME. TO MEX. AND B.C. TO MEX. SHORT-STOPPED IN CENT. U.S.	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
BLACK-BELLIED TREE-DUCK DENDROCYGNA AUTUMNALIS	RARE		X			X	X					WESTERN HALF	BREEDS IN COASTAL TEX. WINTERS SOUTHWARD. CASUAL IN CAL., ARIZ., LA.	WINTER VISITOR	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
FULVOUS TREE DUCK DENDROCYGNA BICOLOR	RARE				X	X						COASTAL AREAS OF S.W. LA.	RESIDENT CENT. CALIF. TO MEX. AND E. TEX. TO S.W. LA. CASUAL IN WASH. ACCID. IN MINN., MO., N. CAR., FLA.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
MALLARD ANAS PLATYRHYNCHOS	# COMMON		X			X	X					THROUGHOUT	BREEDS ALAS. AND CAN. SOUTH TO MEX. AND VIR. WINTERS ALAS. TO ME. AND SOUTH TO MEX.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
BLACK DUCK ANAS RUBRIPES	RARE		X		X	X	X				X	NORTHERN HALF	BREEDS E. CAN. SOUTH TO N. DAK. AND S. CAR. WINTERS NOVA SCOTIA TO MICH. AND SOUTH TO TEX. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
MOTTLED DUCK ANAS FULVIGULA	# COMMON				X	X	X				X	COASTAL AREAS	RESIDENT S. FLA. BREEDS COASTAL TEX. AND LA. WINTERS IN BREEDING RANGE. MANY LA. DUCKS MOVE S.W. TO TEX.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GADWALL ANAS STREPERA	# COMMON				X	X	X					THROUGHOUT	BREEDS S. ALAS. AND S. CAN. SOUTH TO CAL. AND N. CAR. WINTERS ON COAST ALAS. TO MEX. AND ACROSS S. 1/2 U.S.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
PINTAIL ANAS ACUTA	COMMON				X	X	X					THROUGHOUT	BREEDS ACROSS CAN. AND ALAS. SOUTH TO S. CAL. AND PENN. WINTERS ON COAST ALAS. TO CAL. AND FROM ARIZ. TO MASS. AND SOUTH TO MEXICO.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
GREEN-WINGED TEAL ANAS CRECCA	COMMON					X	X					THROUGHOUT	BREEDS ACROSS ALAS. AND CAN. SOUTH TO CALIF. AND N.M. AND EAST TO N.Y. AND ME. WINTERS B.C. TO WISC. TO ME. AND SOUTHWARD.	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
BLUE-WINGED TEAL ANAS DISCORS	# COMMON					X	X					THROUGHOUT	BREEDS S. CAN. AND THROUGHOUT U.S. EXCEPT S.E. STATES. WINTERS S. CAL., TO LA., TO ILL. TO MD. AND SOUTH.	MIGRANT, SOME BREED	MINOR HABITAT ELIMINATION
CINNAMON TEAL ANAS CYANOPTERA	RARE					X	X					SOUTHWEST PARTS	BREEDS IN WESTERN STATES. WINTERS FROM S. CAL. TO S.W. LA. AND SOUTH.	WINTER RESIDENT	MINOR HABITAT ELIMINATION

1, UPLAND FOREST	6, BAYS AND/OR PONDS
2, BOTTOMLAND FOREST	7, BUILDINGS
3, BRUSH	8, BEACHES
4, FIELDS	9, ISLANDS
5, MARSH	10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
NORTHERN SHOVELER ANAS CLYPEATA	COMMON				X	X	X					THROUGHOUT	BREEDS IN ALAS, CAN, AND N, 3/4 OF U,S, WINTERS ON ALL COASTS AND IN N,M,, ARIZ, AND TEX,	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
AMERICAN WIGEON ANAS AMERICANA	COMMON				X	X	X					THROUGHOUT	BREEDS N,W, AND N, CENT, STATES, WINTERS ON ALL COASTS AND ACROSS S, CENT, STATES,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
WOOD DUCK AIX SPONSA	# COMMON		X			X						THROUGHOUT	BREEDS ME, TO MINN, AND SOUTH TO TEX, AND FLA, ALSO IN N,W, STATES, WINTERS IN S,E, AND WESTERN STATES	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
REDHEAD AYTHYA AMERICANA	RARE						X					THROUGHOUT	BREEDS IN N, CENT, STATES, WINTERS ON PAC, COAST AND ACROSS S, 1/2 OF U,S,	WINTER RESIDENT	MINOR HABITAT ALTERATION
RING-NECKED DUCK AYTHYA COLLARIS	COMMON						X					THROUGHOUT	BREEDS ALAS, AND S, CAN, SOUTH TO CAL,, IOWA, AND ME, WINTERS ON PAC, AND ATL, COASTS AND ACROSS SO, U,S,	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ALTERATION
CANVASBACK AYTHYA VALISINERIA	RARE						X					COASTAL AREAS	BREEDS IN ALAS,, W, CAN, AND N,W, STATES, WINTERS ON ATL,, PAC, AND GULF COASTS, ALSO SOME IN CENT, U,S,	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ALTERATION
GREATER SCAUP AYTHYA MARILA	RARE						X					COASTAL AREAS	BREEDS IN ALAS,, W, AND CENT, CAN,, AND N, CENT, STATES, WINTERS ON ATL,, PAC,, AND GULF COASTS,	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ALTERATION
LESSER SCAUP AYTHYA AFFINIS	ABUNDANT						X					THROUGHOUT	BREEDS IN ALAS,, W, CAN, AND N, CENT, STATES, WINTERS FROM BRIT, COL, TO ARK, TO MD, AND SOUTHWARD,	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ALTERATION

1, UPLAND FOREST	6, BAYS AND/OR PONDS
2, BOTTOMLAND FOREST	7, BUILDINGS
3, BRUSH	8, BEACHES
4, FIELDS	9, ISLANDS
5, MARSH	10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
COMMON GOLDENEYE BUCEPHALA CLANGULA	RARE						X					COASTAL AREAS	BREEDS IN ALAS,, CAN, AND EXTREME N, U,S; WINTERS IN B,C, AND THROUGH ALL OF U,S, EXCEPT N, CENT, STATES,	WINTER RESIDENT	MINOR HABITAT ALTERATION
BUFFLEHEAD BUCEPHALA ALBEOLA	RARE						X					THROUGHOUT	BREEDS IN ALAS,, W, CAN,, ORE,, AND CAL; WINTERS THROUGHOUT U,S,	WINTER RESIDENT	MINOR HABITAT ALTERATION
OLDSQUAW CLANGULA HYEMALIS	RARE						X					THROUGHOUT	BREEDS IN ALAS, AND N, CAN, WINTERS ON PAC, COAST, ALAS, TO WASH,; ON ATL, COAST GREENLAND TO S, CAR,; AND ON GULF COAST; SOME IN INTERIOR,	WINTER VISITOR	MINOR HABITAT ALTERATION
RUDDY DUCK OXYURA JAMAICENSIS	RARE					X	X					THROUGHOUT	BREEDS W, OF PLAINS, OCCAS, IN OHIO AND PENN, WINTERS IN PAC, STATES; ACROSS ARIZ,, N,M,, TEX,, AND LA,; AND E, OF MISS, EXCEPT NEW ENG,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION.
MASKED DUCK OXYURA DOMINICA	RARE					X	X					SOUTHWEST PARTS	RESIDENT IN CARIB, AND S, AM, CASUAL IN S, TEX, ACCID, IN WISC,, VT,, MD,, MASS, AND LA,	WINTER VISITOR	MINOR HABITAT ELIMINATION
HOODED MERGANSER LOPHODYTES CUCULLATUS	COMMON		X				X					THROUGHOUT	BREEDS ALAS, TO NEW BRUNS, AND SOUTH TO ORE, AND FLA, WINTERS THROUGHOUT EXCEPT N, CENT, STATES,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
COMMON MERGANSER MERGUS MERGANSER	RARE						X					THROUGHOUT	BREEDS IN ALAS,, S, CAN,, NEW ENG,, N, CENT, STATES AND W, OF ROCKIES, WINTERS ON PAC, COAST ALAS, TO MEX, AND THROUGHOUT U,S, EXCEPT N, CENT, STATES,	WINTER VISITOR	MINOR HABITAT ALTERATION
RED-BREASTED MERGANSER MERGUS SERRATOR	COMMON						X					THROUGHOUT	BREEDS IN ALAS,, CAN, (EXCEPT S,W, CORNER), AND N, U,S, FROM MINN, TO NEW ENG; WINTERS ON PAC COAST ALAS, TO MEX, AND THROUGHOUT U,S,	WINTER RESIDENT	MINOR HABITAT ALTERATION

*1, UPLAND FOREST 6, BAYS AND/OR PONDS
*2, BOTTOMLAND FOREST 7, BUILDINGS
*3, BRUSH 8, BEACHES
*4, FIELDS 9, ISLANDS
*5, MARSH 10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
CATHARTIDAE (AMERICAN VULTURES)															
TURKEY VULTURE CATHARTES AURA	COMMON	X	X	X	X	X						THROUGHOUT	BREEDS THROUGHOUT EXCEPT NEW ENG, WINTERS IN SOUTHERN HALF OF U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
BLACK VULTURE CORAGYPS ATRATUS	COMMON	X	X	X	X							THROUGHOUT EXCEPT COASTAL MARSHES	RESIDENT MD, TO KAN, AND SOUTH TO ARIZ, AND FLA, OCCAS, IN DAKOTAS, S, CAN,, N.Y, AND MASS,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
ACCIPITRIDAE (HAWKS)															
SWALLOW-TAILED KITE ELANOIDES FORFICATUS	RARE		X									SOUTHERN HALF	BREEDS ON COAST S, CAR, TO MEX, FORMERLY BRED IN MIDWEST, WINTERS IN CENT, AND S, AM,	MIGRANT, SOME BREED	MINOR HABITAT ELIMINATION
MISSISSIPPI KITE ICTINIA MISSISSIPPIENSIS	RARE		X									THROUGHOUT	BREEDS S, CAR, TO TEX, ON COAST AND UP MISS, VALLEY TO IO, WINTERS S, FLA,, S, TEX, AND SOUTH, CASUAL IN CENT, AND E, CENT, STATES,	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
SHARP-SHINNED HAWK ACCIPITER STRIATUS	RARE	X	X									THROUGHOUT	BREEDS ALAS, TO NWFLD, AND SOUTH TO S, CAL,, LA,, AND S, CAR, WINTERS B,C, TO NEBR, TO NOVA SCOTIA AND S,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
COOPER'S HAWK ACCIPITER COOPERII	RARE	X	X	X								THROUGHOUT	BREEDS THROUGHOUT U.S, EXCEPT S, TEX, MISS,, ALA, AND FLA, WINTERS THROUGHOUT U.S, EXCEPT N, CENT, AREA,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
RED-TAILED HAWK BUTEO JAMAICENSIS	COMMON	X	X	X	X	X						THROUGHOUT	BREEDS IN ALAS, TO NOVA SCOTIA AND SOUTH THROUGHOUT U.S, WINTERS THROUGHOUT EXCEPT N, CENT, STATES,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
RED-SHOULDERED HAWK BUTEO LINEATUS	COMMON	X	X	X								THROUGHOUT	BREEDS MINN, TO QUEBEC AND SOUTH TO TEX, AND FLA,, ALSO ON CAL, COAST, WINTERS NEB, TO MASS, AND S, TO TEX, AND FLA,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
BROAD-WINGED HAWK BUTEO PLATYPTERUS	COMMON	X	X									THROUGHOUT	BREEDS ALB. TO NOVA SCOTIA AND SOUTH TO CENT. TEX. AND FLA. WINTERS IN S. FLA.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
FERRUGINOUS HAWK BUTEO REGALIS	RARE		X		X	X						THROUGHOUT	BREEDS WASH. TO MAN. AND SOUTH TO NEV. AND TEX. WINTERS IN S.W. STATES. CASUAL IN MINN. AND LA.	WINTER VISITOR	MINOR HABITAT ELIMINATION
GOLDEN EAGLE AQUILA CHRYSAETOS	RARE	X	X		X							THROUGHOUT	BREEDS ALAS. AND CAN. SOUTH TO CAL. AND TEX., ALSO IN APPACH. AND NEW ENG. WINTERS IN SAME RANGE AND S.E.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
BALD EAGLE HALIAEETUS LEUCOCEPHALUS	RARE		X				X					THROUGHOUT	BREEDS S. ALAS. TO NWFLD. AND SOUTH TO ORE. AND MASS., ALSO CALIF., ARIZ. N.M. AND TEX. TO VIR. AND SOUTH. WINTERS IN BREEDING RANGE AND GOES NORTH AFTER BREEDING.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
MARSH HAWK CIRCUS CYANEUS	COMMON				X	X						THROUGHOUT	BREEDS IN ALAS. AND CAN. AND SOUTH TO CAL. AND VIR. WINTERS IN S.W. CAN. AND THROUGHOUT U.S.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
PANDIONIDAE (OSPREYS)															
OSPREY PANDION HALIAETUS	RARE					X	X					THROUGHOUT	BREEDS ALAS., CAN (EXCEPT N.E.) AND U.S. (EXCEPT EXTREME S.W.). WINTERS COAST OF CAL. SOUTH AND ON GULF COAST.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
FALCONIDAE (FALCONS)															
PEREGRINE FALCON FALCO PEREGRINUS	RARE				X	X			X			THROUGHOUT	BREEDS THROUGHOUT ALAS. AND CAN. AND SOUTH TO CAL., W. TEX. AND GA. WINTERS IN COASTAL CAL. AND FROM ARIZ TO NEW BRUNS. AND SOUTH TO GULF	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
MERLIN FALCO COLUMBARIUS	RARE			X	X	X						COASTAL AREAS	BREEDS THROUGHOUT ALAS., CAN. (EXCEPT N.E.), AND NORTHERN TIER OF STATES. WINTERS WASH. TO BAJA, GT. BASIN, AND ON COAST TEX. TO S. CAR.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
AMERICAN KESTREL **FALCO SPARVERIUS**	COMMON	X			X							THROUGHOUT	BREEDS THROUGHOUT ALAS., CAN. (EXCEPT N.E.) AND U.S. WINTERS THROUGHOUT U.S. EXCEPT N. CENT. STATES.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
PHASIANIDAE (QUAIL)															
BOBWHITE **COLINUS VIRGINIANUS**	COMMON	X		X	X				X			THROUGHOUT	RESIDENT MAINE TO WYOMING AND SOUTH TO NEW MEXICO AND FLA. INTROD IN PAC. N.W.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
RALLIDAE (RAILS)															
KING RAIL **RALLUS ELEGANS**	ABUNDANT					X						THROUGHOUT	BREEDS MASS. TO MINN. AND SOUTH TO TEX. AND FLA. WINTERS CHESAPEAKE BAY TO TEX. AND CASUALLY NORTHWARD.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
CLAPPER RAIL **RALLUS LONGIROSTRIS**	COMMON					X						COASTAL AREAS	RESIDENT IN SALINE COASTAL MARSHES FROM MASS. TO TEX. AND FROM CENT. CAL. TO MEX. ALSO ON COLO. RIV. IN CALIF. AND TEX.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
VIRGINIA RAIL **RALLUS LIMICOLA**	COMMON				X	X						COASTAL AREAS	BREEDS IN S. CAN. AND ME. TO WASH. AND SOUTH TO CAL., COLO., AND N. CAR. WINTERS ON PAC. COAST, CAN. TO MEX. AND ON ATL. COAST N. CAR. TO TEX.	MIGRANT AND WINTER RESIDENT SOME BREED	MINOR HABITAT ELIMINATION
SORA **PORZANA CAROLINA**	COMMON				X	X						THROUGHOUT	BREEDS IN S. CAN., AND IN U.S. FROM ME. TO WASH. AND SOUTH TO BAJA AND COLO. AND PENN. WINTERS S. CAR. TO TEX. ON COAST, AND IN S. ARIZ.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
YELLOW RAIL **COTURNICOPS NOVEBORACENSIS**	RARE				X	X						SOUTHERN HALF	BREEDS S.E. CAN. AND N.E. U.S. ALSO LOCALLY IN E. CAL. WINTERS ON COAST, ORE. TO S. CAL. AND LA. TO FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
BLACK RAIL LATERALLUS JAMAICENSIS	RARE				X	X						SOUTHERN HALF	BREEDS LOCALLY IN KAN., IND., OHIO, N.Y., CONN., MASS., N.J. DELA., VIR., S. CAR. FLA. AND S. CAL. MIGRANT SOUTHWARD. WINTERS IN S. LA., GA., FLA. AND ON CENT. CAL. COAST	WINTER VISITOR	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
KILLDEER **CHARADRIUS VOCIFERUS**	# ABUNDANT				X	X			X			THROUGHOUT	BREEDS BRIT. COL. TO NEW BRUNS AND S. TO MEXICO. WINTERS BRIT. COL. TO N.Y. AND S. TO MEX.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
PIPING PLOVER **CHARADRIUS MELODUS**	RARE								X		X	COASTAL AREAS AND MISS RIVER	BREEDS ALB. TO ONT. AND S. TO N.Y. AND NEBR. ON ATL COAST, NEWF. TO VIR. WINTERS S. CAR TO FLA. AND TEX. TO FLA. ACCID. IN WYO., COLO.	MIGRANT AND WINTER RESIDENT SOME SUMM.	NO SIGNIFICANT CHANGE
SNOWY PLOVER CHARADRIUS ALEXANDRINUS	RARE								X			THROUGHOUT	BREEDS WASH. TO S. CAL. AND E. TO CENT. TEX. AND KAN. ALSO LA. TO FLA. WINTERS WASH. TO S. CAL. AND TEX. TO FLA. ACCID. IN NEB., WIS. AND WYO.	MIGRANT SOME WINTER	NO SIGNIFICANT CHANGE
AMERICAN GOLDEN PLOVER **PLUVIALIS DOMINICA**	COMMON				X	X						THROUGHOUT	BREEDS N. AND W. ALAS. AND N. CAN. WINTERS S. AM., LA. AND MISS. MIGRANT IN MISS. VAL., SOME THROUGHOUT U.S.	MIGRANT	MINOR HABITAT ELIMINATION
BLACK-BELLIED PLOVER **PLUVIALES SQUATAROLA**	COMMON				X	X			X	X	X	COASTAL AREAS	BREEDS N. ALAS. AND N. CAN. NON-BREEDERS SUMMER ALAS. TO CALIF., LA. TO MEX. WINTERS B.C. TO MEX., LA. TO MEX. AND MASS. TO FLA.	WINTER RESIDENT. SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
SCOLOPACIDAE (SANDPIPERS)															
MARBLED GODWIT **LIMOSA FEDOA**	RARE				X	X			X	X		COASTAL AREAS	BREEDS ALB. AND ONT. S. TO MINN. AND MONT. NON-BREEDERS IN CAL. AND FLA. WINTERS FROM CENT. CAL. TO S. CAR. AND SOUTH. MIGRANT THROUGH MOST OF US	MIGRANT	MINOR HABITAT ELIMINATION
WHIMBREL **NUMENIUS PHAEOPUS**	RARE				X	X			X		X	COASTAL AREAS	BREEDS N. CAN. NON-BREED. CAL. AND N.J. TO S.C. WINTERS CENT. CAL. TO MEX. AND LA. TO TEX. MIGRANT ON ATL. PAC. AND GULF COASTS.	MIGRANT	MINOR HABITAT ELIMINATION
LONG-BILLED CURLEW **NUMENIUS AMERICANUS**	RARE				X	X				X	X	COASTAL AREAS	BREEDS B.C. TO MAN. AND S. TO TEX. AND CALIF. NON-BREED S. CAR., FLA., LA. WIN. S. CAL. TO LA. AND S. CAR. TO FLA. MIG. W. OF MISS. RIV.	MIGRANT. SOME WINTER	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
PURPLE GALLINULE **PORPHYRULA MARTINICA**	COMMON		X		X	X	X					THROUGHOUT	BREEDS IN S.E. STATES. WINTERS ON GULF COAST. WANDERS WIDELY IN E. AND CENT. U.S.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
COMMON GALLINULE **GALLINULA CHLOROPUS**	# COMMON		X			X	X					THROUGHOUT	BREEDS VT. TO MINN. AND SOUTH TO TEX. AND FLA. ALSO LOCALLY IN CAL. AND ARIZ. WINTERS ON COAST N.C. TO TEX. ACCIDENTAL IN W. U.S.	PERM. RES. IN SOUTH, BREEDS IN NORTH	MINOR HABITAT ELIMINATION
AMERICAN COOT **FULICA AMERICANA**	# ABUNDANT		X			X	X					THROUGHOUT	BREEDS THROUGHOUT U.S. WINTERS ON PAC. COAST CAN. TO MEX., ACROSS S. U.S. TO LA., UP MISS. AND OHIO VALLEYS TO MD. AND SOUTHWARD ALONG COAST.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
RECURVIROSTRIDAE (STILTS)															
BLACK-NECKED STILT **HIMANTOPUS MEXICANUS**	# COMMON				X	X					X	COASTAL AREAS	BREEDS SASK. TO CALIF. AND EAST TO LA. ALSO S. CAR. TO FLA. WINTERS CENT. CALIF. TO BAJA AND TEX. TO LA. MIGRANT IN CENT U.S. AND ALONG ATLAN.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
AMERICAN AVOCET **RECURVIROSTRA AMERICANA**	COMMON				X	X					X	COASTAL AREAS, MIGRANT INLAND	BREEDS MAN. TO WASH. AND S. TO S. CAL. AND CENT. TEX. WINTERS S. CAL. AND S. TEX COASTS. MIGRANT THROUGH EASTERN U.S.	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
CHARADRIIDAE (PLOVERS)															
SEMIPALMATED PLOVER **CHARADRIUS SEMIPALMATUS**	COMMON								X	X	X	COASTAL AREAS, MIGRANT INLAND	BREEDS ALAS. TO NOVA SCOTIA. WINTERS S. CAR. TO TEX. AND CENT. CAL. TO MEX MIGRANT THROUGHOUT U.S.	MIGRANT AND WINTER RESIDENT SOME SUMM.	NO SIGNIFICANT CHANGE
WILSON'S PLOVER **CHARADRIUS WILSONIA**	UNCOMMON								X		X	COASTAL AREAS	BREEDS VIR. TO FLA. AND TEX. TO FLA. WINTERS TEX. TO FLA. CASUAL N.Y., NEW ENG. AND OHIO.	PERMANENT RESIDENT	NO SIGNIFICANT CHANGE

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
UPLAND SANDPIPER BARTRAMIA AMERICANA	RARE				X							THROUGHOUT	BREEDS S. ALAS. TO ME. AND S. TO VIR. TEX. AND ORE. WINTERS S. AM. MIGRANT THROUGHOUT U.S.	MIGRANT	MINOR HABITAT ELIMINATION
GREATER YELLOWLEGS TRINGA MELANOLEUCA	COMMON					X			X	X	X	COASTAL AREAS	BREEDS S. ALAS. AND CAN. NON-BREED ON ALL U.S. COASTS. WINTERS ORE. TO CENT CAL. AND E. TO S. CAR. MIGRANT THROUGHOUT U.S.	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
LESSER YELLOWLEGS TRINGA FLAVIPES	# COMMON					X			X	X	X	THROUGHOUT	BREEDS ALAS AND CENT. CAN. WINTERS ON COAST S. CAR. TO TEX. MIGRANT THROUGHOUT U.S.	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
SOLITARY SANDPIPER TRINGA SOLITARIA	COMMON		X			X						THROUGHOUT	BREEDS IN ALAS. AND CAN. WINTERS GA. TO FLA. AND LA. TO MEX. MIGRANT THROUGHOUT U.S. CASUAL IN SEV. ST.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
WILLET CATOPTROPHORUS SEMIPALMATUS	# COMMON					X			X		X	COASTAL AREAS	BREEDS ALB. TO MAN. S. TO COLO. AND CALIF. ALSO N. JER. TO FLA. AND TEX. TO FLA. WINTERS CAL. TO MEX., VIR. TO FLA. AND FLA. TO MEX. MIG. ON PAC. AND GULF COASTS.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
SPOTTED SANDPIPER ACTITIS MACULARIA	# COMMON					X			X			THROUGHOUT	BREEDS THROUGHOUT CAN. ALAS. AND U.S. EXCEPT COASTAL S.E. WINTERS PACIFIC COAST CAN. TO MEX., S. ARIZ. AND N.M. AND ON COAST S. CAR. TO MEX.	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
RUDDY TURNSTONE ARENARIA INTERPRES	RARE								X	X		COASTAL AREAS	BREEDS N. ALAS. AND CAN. NON- BREED. ON ATL. AND GULF COASTS. WINTERS S. CAR. TO MEX. AND CAL. TO MEX. MIGRANT ON ATL. AND PAC. COASTS.	MIGRANT, SOME WINTER	NO SIGNIFICANT CHANGE
WILSON'S PHALAROPE STEGANOPUS TRICOLOR	RARE				X				X	X	X	THROUGHOUT	BREEDS B.C. TO MAN. AND S. TO MICH. AND S. CAL. WINTERS S. TEX. AND S. AM. MIGRANT THROUGH REST OF U.S.	MIGRANT	MINOR HABITAT ELIMINATION

1, UPLAND FOREST	6, BAYS AND/OR PONDS
2, BOTTOMLAND FOREST	7, BUILDINGS
3, BRUSH	8, BEACHES
4, FIELDS	9, ISLANDS
5, MARSH	10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
AMERICAN WOODCOCK PHILOHELA MINOR	COMMON	X	X		X							THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS MAN. TO NEWF. AND S. TO LA. AND FLA. WINTERS MAINLY IN ARK., LA. AND MISS. BUT ALSO FROM MO. TO N.J. AND S. TO LA. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
COMMON SNIPE CAPELLA GALLINAGO	COMMON				X	X						THROUGHOUT	BREEDS THROUGHOUT MOST OF ALAS. AND CAN. AND ME. TO WASH. AND SOUTH TO S. CAL., ARIZ. AND EAST TO PENN. WINTERS VIR. TO B.C. AND SOUTH TO S. CAL. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
SHORT-BILLED DOWITCHER LIMNODROMUS GRISEUS	COMMON				X	X			X		X	COASTAL AREAS	BREEDS E. ALAS. AND N. CAN. WINTERS SOUTHWARD TO S. AMERICA. MIGRANT IN MISS. VALL. AND ON ATL. COAST.	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
LONG-BILLED DOWITCHER LIMNODROMUS SCOLOPACEUS	COMMON				X	X			X		X	THROUGHOUT	BREEDS N. ALAS. AND N.W. CAN. NON-BREEDERS SUMMER IN CAL., TEX. AND LA. WINTERS CENT. CAL. TO FLA. AND SOUTH. MIGRANT IN SPRING IN W. U.S., IN FALL OCCAS EAST TO ATLANTIC.	MIGRANT, SOME WINTER	NO SIGNIFICANT CHANGE
SANDERLING CALIDRIS ALBA	COMMON								X	X		COASTAL AREAS	BREEDS EXTREME N. CAN. AND N. ALAS. NON-BREEDERS SUMMER IN S. CAL. AND ON GULF COAST. WINTERS ON COASTS MASS. TO MEX. AND CAN. TO MEX. MIGRANT ON COASTS, SOME INLAND.	WINTER RESIDENT, SOME BREED	NO SIGNIFICANT CHANGE
SEMIPALMATED SANDPIPER CALIDRIS PUSILLA	COMMON					X			X	X	X	THROUGHOUT	BREEDS N. CAN. AND N. ALAS. NON-BREEDERS SOUTH TO GULF. WINTERS S. CAR. TO MEX. ON COAST. MIGRANT IN INTERIOR U.S.	MIGRANT AND WINTER RESIDENT SOME SUMM.	MINOR HABITAT ELIMINATION
WESTERN SANDPIPER CALIDRIS MAURI	COMMON					X			X	X	X	THROUGHOUT	BREEDS N.W. ALAS. NON-BREEDERS SOUTH TO GULF AND CAL. WINTERS N. CAR. TO MEX. ON COAST AND N. CAL. TO MEX. ON PACIFIC. MIGRANT ON ATL. AND PAC. COASTS AND SOME IN INTERIOR.	MIGRANT AND WINTER RESIDENT SOME SUMM.	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
LAUGHING GULL LARUS ATRICILLA	# ABUNDANT					X	X		X	X		COASTAL AREAS	BREEDS NOVA SCOT. TO MEX. AND INDIES, ALSO SALTON SEA. WINTERS N. CAR. TO MEX. AND INDIES. ACCID. IN CENT. U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
FRANKLIN'S GULL LARUS PIPIXCAN	RARE				X		X					COASTAL AREAS, MIGRANT INLAND	BREEDS S. CENT. CAN. AND N. CENT. U.S. NON-BREEDERS SOUTH TO MEX. WINTERS LA. TO S. AM. MIGRANT FROM ROCKIES TO MISS. RIV.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
BONAPARTE'S GULL LARUS PHILADELPHIA	# RARE						X		X	X		THROUGHOUT	BREEDS ALAS. AND CENT. CAN. NON-BREEDERS IN WASH., CAL., OHIO, MASS. WINTERS ON ALL COASTS AND GT. LAKES.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ALTERATION
GULL-BILLED TERN GELOCHELIDON NILOTICA	COMMON				X	X	X		X	X		COASTAL AREAS AND ISLANDS	BREEDS MD. TO FLA., FLA. TO MEX. AND SALTON SEA. WINTERS FLA. TO S. AM.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
FORSTER'S TERN STERNA FORSTERI	# COMMON					X	X		X	X		THROUGHOUT	BREEDS S. CENT. CAN., N. CENT. AND N.W. U.S., MD., VIR., LA. TO MEX. WINTERS N. CAR. TO FLA., FLA. TO MEX. AND S. CAL. TO MEX. MIGRANT CENT. US.	PERM. RES. ON COAST, MIGRANT INLAND	MINOR HABITAT ELIMINATION
COMMON TERN STERNA HIRUNDO	RARE						X		X	X		THROUGHOUT	BREEDS EXTREME N.E. AND N. CENT. U.S. AND S.E. AND S. CENT. CAN., ALSO E. HEM. WINTERS S. CAR. TO INDIES AND E. HEM.	MIGRANT AND WINTER RESIDENT SOME BREED	MINOR HABITAT ALTERATION
SOOTY TERN STERNA FUSCATA	RARE								X	X		COASTAL AREAS AND ISLANDS	BREEDS IN GULF OF MEXICO (FLA. AND LA.). WINTERING AREA UNKNOWN-OPEN SEAS AS FAR N. AS NOVA SCOTIA. ACCID. ON E. SEABORD, TENN. AND W. VIR.	SUMMER RESIDENT	NO SIGNIFICANT CHANGE
LEAST TERN STERNA ALBIFRONS	COMMON						X		X	X		THROUGHOUT	BREEDS MASS. TO FLA., FLA. TO TEX., CENT. CAL. TO MEX., ON MISS. RIV. AND W. TRIBS., AND COLO. R. WINTERS IN S. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ALTERATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
CUCULIDAE (CUCKOOS)															
YELLOW-BILLED CUCKOO COCCYZUS AMERICANUS	COMMON	X	X	X	X							THROUGHOUT	BREEDS THROUGHOUT EXCEPT CAL., IDA., WYO. AND MONT. WINTERS IN S. AMERICA.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
BLACK BILLED CUCKOO COCCYZUS ERYTHROPTHALMUS	RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO IDA. AND SOUTH TO NEB., ARK. AND S. CAR. WINTERS IN S. AMERICA.	MIGRANT	MINOR HABITAT ELIMINATION
GROOVE-BILLED ANI CROTOPHAGA SULCIROSTRIS	RARE			X	X							SOUTHERN HALF	RESIDENT S. TEX. S.E. LA. AND MEX. CASUAL IN MISS. ACCID. IN CENT. U.S. AND ARIZ.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
TYTONIDAE (BARN OWLS)															
BARN OWL TYTO ALBA	COMMON	X	X		X			X				THROUGHOUT	BREEDS THROUGHOUT U.S. EXCEPT EXTREME N. CENT. STATES. RANGES NORTH AFTER BREEDING.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
STRIGIDAE (OWLS)8															
SCREECH OWL OTUS ASIO	COMMON	X	X	X								THROUGHOUT	RESIDENT S.E. ALAS., S. CAN. AND THROUGHOUT U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GREAT HORNED OWL BUBO VIRGINIANUS	COMMON	X	X					X				THROUGHOUT	RESIDENT FROM TREELINE OF ARTIC TO STS. OF MAGELLAN.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
BURROWING OWL SPEOTYTO CUNICULARIA	RARE				X				X			THROUGHOUT	BREEDS MANITOBA TO BRIT. COL. AND SOUTH TO CAL. AND TEX. AND IN CENT. FLA. WINTERS ORE. TO ALA. AND SOUTH.	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ELIMINATION
BARRED OWL STRIX VARIA	COMMON	X	X									THROUGHOUT	RESIDENT FROM BRIT. COL. TO TEX. AND EAST TO MAINE AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1, UPLAND FOREST	6, BAYS AND/OR PONDS
2, BOTTOMLAND FOREST	7, BUILDINGS
3, BRUSH	8, BEACHES
4, FIELDS	9, ISLANDS
5, MARSH	10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
LONG-EARED OWL **ASIO OTUS**	RARE	X			X							THROUGHOUT	BREEDS NOVA SCOT, TO MCKEN, TO BRIT, COL, AND SOUTH TO S, CAL, AND VIR, WINTERS THROUGHOUT U,S, AND S,W, CAN, EXCEPT STRIP IN PLAINS,	WINTER VISITOR	MINOR HABITAT ELIMINATION
SHORT-EARED OWL **ASIO FLAMMEUS**	RARE				X	X						THROUGHOUT	BREEDS N, ALAS, THROUGHOUT CAN, AND ME, TO WASH, AND SOUTH TO S, CAL,, CENT, NEV, AND VIR, WINTERS MASS, TO WASH AND SOUTH TO MEX, AND FLA,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
CAPRIMULGIDAE (GOATSUCKERS)															
CHUCK-WILL'S-WIDOW **CAPRIMULGUS CAROLINENSIS**	COMMON	X	X									THROUGHOUT	BREEDS N,J, TO KAN, AND SOUTH TO E, TEX, AND FLA, WINTERS LA,, FLA,, INDIES AND S, AM,	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
WHIP-POOR-WILL **CAPRIMULGUS VOCIFERUS**	RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT, TO CENT, SASK, AND SOUTH TO E, TEX,, N, LA, (FORMERLY) AND GA, ALSO N,M,, ARIZ, AND MEX, WINTERS IN S, AM,, INDIES, AND ON GULF COAST,	MIGRANT, SOME WINTER	MINOR HABITAT ELIMINATION
COMMON NIGHTHAWK **CHORDEILES MINOR**	# COMMON	X	X		X			X				THROUGHOUT	BREEDS IN SOUTHERN 1/2 OF CAN, AND THROUGHOUT U,S, WINTERS IN S, AM,	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
APODIDAE (SWIFTS)															
CHIMNEY SWIFT **CHAETURA PELAGICA**	# COMMON	X	X					X				THROUGHOUT	BREEDS NOVA SCOT, TO S,E, SASK, AND SOUTH TO E, TEX, AND FLA, WINTERS IN S, AM,	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
TROCHILIDAE (HUMMINGBIRDS)															

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
BLACK-CHINNED HUMMINGBIRD **ARCHILOCHUS ALEXANDRI**	RARE			X								SOUTHERN HALF	BREEDS MONT. TO B.C. AND SOUTH TO BAJA AND W. TEX. WINTERS S. CAL. AND MEX. CASUAL IN LA.	WINTER VISITOR	MINOR HABITAT ALTERATION
RUBY-THROATED HUMMINGBIRD **ARCHILOCHUS COLUBRIS**	# COMMON	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO CENT ALB. AND SOUTH TO N. DAK., TEX. AND FLA. WINTERS COASTAL TEX., ALA. AND FLA.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
RUFOUS HUMMINGBIRD **SELASPHORUS RUFUS**	RARE	X	X	X								SOUTHERN HALF	BREEDS S.E. ALAS. SOUTH TO MONT. AND N. CAL. SEEN IN MIGRATION IN NEB., OKLA., TEX., LA., FLA. AND S. CAR. WINTERS IN S. AM.	WINTER VISITOR	MINOR HABITAT ELIMINATION
ALCEDINIDAE (KINGFISHERS)															
BELTED KINGFISHER **MEGACERYLE ALCYON**	COMMON		X			X	X					THROUGHOUT	BREEDS IN S. 1/2 OF CAN. AND THR'OUT U.S. WINTERS S. ALAS. TO NOVA SCOT. AND SOUTH TO BAJA AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
PICIDAE (WOODPECKERS)															
COMMON FLICKER **COLAPTES AURATUS**	# COMMON	X	X		X							THROUGHOUT	BREEDS ALAS., THROUGHOUT CAN. EXCEPT NORTH AND THROUGHOUT U.S. WINTERS SOUTH OF NORTHERN LIMITS OF BREEDING RANGE	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
PILEATED WOODPECKER **DRYOCOPUS PILEATUS**	COMMON	X	X									THROUGHOUT	RESIDENT, SOUTHERN 1/3 OF CAN AND THROUGHOUT U.S. EXCEPT GT. BASIN, S. ROCKIES AND EXTREME W. PLAINS.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
RED-BELLIED WOODPECKER **CENTURUS CAROLINUS**	# COMMON	X	X									THROUGHOUT	RESIDENT N.Y. TO MINN. AND SOUTH TO E. TEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
RED-HEADED WOODPECKER **MELANERPES ERYTHROCEPHALUS**	# COMMON	X	X									THROUGHOUT	RESIDENT N.H. TO SASK. AND SOUTH TO CENT. TEX. AND FLA. MIGRANT IN NORTH PART OF RANGE.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1, UPLAND FOREST
2, BOTTOMLAND FOREST
3, BRUSH
4, FIELDS
5, MARSH
6, BAYS AND/OR PONDS
7, BUILDINGS
8, BEACHES
9, ISLANDS
10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
YELLOW-BELLIED SAPSUCKER **SPHYRAPICUS VARIUS**	# COMMON	X	X									THROUGHOUT	BREEDS ALAS. TO NOVA SCOT. AND SOUTH TO S. CAL. AND N. CAR. ABSENT FROM MOST PLAINS. WINTERS ALAS. TO CAL.; NEV. TO COLO. AND SOUTH TO MEX.; AND N.J. TO MO. AND S. TO E. TEX. AND FL.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
HAIRY WOODPECKER DENDROCOPOS VILLOSUS	# COMMON	X	X									THROUGHOUT	RESIDENT S.E. ALAS. TO NWFD. AND SOUTH TO BAJA AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
DOWNY WOODPECKER DENDROCOPOS PUBESCENS	# COMMON	X	X									THROUGHOUT	RESIDENT S.E. ALAS. TO NWFD. AND SOUTH TO S. CAL. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
TYRANNIDAE (FLYCATCHERS)															
EASTERN KINGBIRD **TYRANNUS TYRANNUS**	# COMMON			X	X							THROUGHOUT	BREEDS QUEB. TO B.C. AND SOUTH TO N. CAL. AND FLA. WINTERS IN S. AM.	SUMMER RESIDENT	MAJOR HABITAT ELIMINATION
WESTERN KINGBIRD **TYRANNUS VERTICALIS**	RARE				X	X						THROUGHOUT	BREEDS ONT. TO B.C. AND SOUTH TO BAJA AND LA. MIGRANT NEW BRUNS. TO S. CAR. WINTERS S. CAR. TO FLA. AND IN S. AM.	MIGRANT AND WINTER RESIDENT SOME BREED	MINOR HABITAT ELIMINATION
SCISSOR-TAILED FLYCATCHER **MUSCIVORA FORFICATA**	RARE			X	X							THROUGHOUT	BREEDS MO., NEB. AND COLO. SOUTH TO MEX., TEX. AND LA. WINTERS MEX. AND CENT. AM. MIGRANT TEX. TO FLA.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION
KISKADEE FLYCATCHER **PITANGUS SULPHURATUS**	RARE	X	X									SOUTHWEST PARTS	RESID. LOWER RIO GR. VAL. AND MEX. CASUAL IN LA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GREAT CRESTED FLYCATCHER MYIARCHUS CRINITUS	# COMMON	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO SASK. AND SOUTH TO E. TEX. AND FLA. WINTERS FLA., MEX., AND S. AM. CASUAL IN MONT., WY., COLO., AND ARIZ.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
EASTERN PHOEBE SAYORNIS PHOEBE	COMMON	X	X	X	X							THROUGHOUT	BREEDS NOVA SCOT. TO CENT. MCKEN. AND SOUTH TO ARIZ. AND S. CAR. WINTERS ON COAST VIR. TO MEX.	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
YELLOW-BELLIED FLYCATCHER EMPIDONAX FLAVIVENTRIS	RARE	X	X	X								THROUGHOUT	BREEDS NWFD. TO B.C. AND SOUTH TO N. DAK. AND N.Y. WINTERS IN CENT. AND S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
ACADIAN FLYCATCHER EMPIDONAX VIRESCENS	# COMMON	X	X									THROUGHOUT	BREEDS CONN. TO S. DAK. AND SOUTH TO CENT. TEX. AND FLA. WINTERS S. AM.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
WILLOW FLYCATCHER EMPIDONAX TRAILLII	RARE			X	X							THROUGHOUT	BREEDS B.C. TO E. MONT. AND SOUTH TO S. CAL. AND W. TEX. WINTERS CENT. AND S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
ALDER FLYCATCHER EMPIDONAX ALNORUM	RARE	X	X	X								THROUGHOUT	BREEDS CENT. ALAS. TO NWFD. AND SOUTH TO CENT. B.C., MAN. AND ARK. TO MD.	MIGRANT	MINOR HABITAT ELIMINATION
LEAST FLYCATCHER EMPIDONAX MINIMUS	RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO W. MCKEN. AND SOUTH TO WYO. AND N.J. ALSO IN APPAL. MTNS. WINTERS MEX. AND CENT. AM.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
EASTERN WOOD PEWEE CONTOPUS VIRENS	COMMON	X										THROUGHOUT	BREEDS N. BRUNS. TO S. MCKEN AND SOUTH TO TEX. AND FLA. WINTERS S. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
OLIVE-SIDED FLYCATCHER NUTTALLORNIS BOREALIS	RARE	X	X	X								THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO BAJA AND N. MEX. ABSENT FROM CENT. U.S. AND PRESENT IN APPAL. MTNS. WINTERS IN S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
VERMILION FLYCATCHER PYROCEPHALUS RUBINUS	RARE				X		X					THROUGHOUT	BREEDS S. CAL. TO S. UTAH AND SOUTH TO BAJA AND MEX. ALSO LOWER RIO GRAN. VALL. WINTERS S. CAL., NEV. AND TEX. TO FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
ALAUDIDAE (LARKS)															
HORNED LARK EREMOPHILA ALPESTRIS	RARE				X							THROUGHOUT	BREEDS THROUGHOUT U.S. AND CAN. WINTERS B.C. TO VIR. AND SOUTH TO MEX.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
HIRUNDINIDAE (SWALLOWS)															
TREE SWALLOW IRIDOPROCNE BICOLOR	# ABUNDANT					X	X					THROUGHOUT	BREEDS ALAS. TO NWFD. AND SOUTH TO S. CAL., WYO. AND MASS. WINTERS S. CAL., S. TEX. TO FLA.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
BANK SWALLOW RIPARIA RIPARIA	# RARE			X	X	X						THROUGHOUT	BREEDS ALAS. TO NWFD. AND SOUTH TO S. CAL., UTAH AND VIR. ALSO IN E. HEM. WINTERS IN S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
ROUGH-WINGED SWALLOW STELGIDOPTERYX RUFICOLLIS	# COMMON			X			X					THROUGHOUT	BREEDS B. C. TO NOVA SCOT. AND SOUTH TO BAJA, MEX. AND FLA. WINTERS IN CENT AM. AND A FEW IN TEX. AND LA.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
BARN SWALLOW HIRUNDO RUSTICA	# COMMON			X	X			X		X		THROUGHOUT	ALAS. TO NWFD. AND SOUTH TO BAJA, MO. AND VIR. ALSO ON GULF COAST IS. AND IN E. HEM. WINTERS IN S. AM.	MIGRANT, SOME BREED	MINOR HABITAT ELIMINATION
CLIFF SWALLOW PETROCHELIDON PYRRHONOTA	RARE			X	X		X					THROUGHOUT	ALAS. TO NOVA SCOT. AND SOUTH TO BAJA N. MEX., ILL., GA. AND N.Y. WINTERS IN S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
PURPLE MARTIN PROGNE SUBIS	# COMMON			X	X			X				THROUGHOUT	BREEDS B.C. TO NOVA SCOT. AND SOUTH TO ARIZ. AND FLA. ALSO ON PAC. COAST B.C. TO S. CAL. WINTERS IN S. AM.	MIGRANT AND SUMMER RESIDENT	MAJOR HABITAT ELIMINATION
CORVIDAE (CROWS)															
BLUE JAY CYANOCITTA CRISTATA	# ABUNDANT	X	X	X	X							THROUGHOUT	RESIDENT ALB. TO NOVA SCOT. AND SOUTH TO CENT. TEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
COMMON CROW CORVUS BRACHYRHYNCHOS	# COMMON	X	X	X	X							THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS YUKON TO NWFD AND SOUTH TO BAJA AND FLA, WINTERS THROUGHOUT CONTINENTAL U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
FISH CROW CORVUS OSSIFRAGUS	# COMMON		X	X	X	X						SOUTHERN HALF	RESIDENT ON COAST R.I. TO TEX, AND INLAND ALONG MAJOR RIVERS	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
PARIDAE (TITS)															
CAROLINA CHICKADEE PARUS CAROLINENSIS	COMMON	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	RESIDENT N.J. TO KAN. AND SOUTH TO E. TEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
TUFTED TITMOUSE PARUS BICOLOR	COMMON	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	RESIDENT CONN. TO MINN. AND NEB. AND SOUTH TO E. TEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
SITTIDAE (NUTHATCHES)															
RED-BREASTED NUTHATCH SITTA CANADENSIS	RARE	X	X	X								THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS IN CANADIAN ZONE ALAS. TO NWFD. AND SOUTH IN ROCKIES TO ARIZ AND N. M. AND IN APPLACH TO N. GA. WINTERS IN BREEDING RANGE AND SOUTH TO TEX. AND FLA.	WINTER VISITOR	MINOR HABITAT ELIMINATION
CERTHIIDAE (CREEPERS)															
BROWN CREEPER CERTHIA FAMILIARIS	RARE	X	X									THROUGHOUT	BREEDS CAN. TO NWFD. AND SOUTH TO BAJA, CENT. TEX., WISC. AND CONN; SOUTH IN APPALACH. TO N. GA. ALSO IN E. HEM. WINTERS AT LOWER ALTITUDES IN BR. RANGE AND SOUTH TO TEX., FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
TROGLODYTIDAE (WRENS)															
HOUSE WREN **TROGLODYTES AEDON**	# COMMON	X	X	X	X			X				THROUGHOUT	BREEDS B.C. TO NWFD. AND SOUTH TO BAJA AND N.C. WINTERS CAL. TO PENN. AND SOUTH TO MEX.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
WINTER WREN **TROGLODYTES TROGLODYTES**	# COMMON	X	X	X								THROUGHOUT	RESID. S. ALAS. BREEDS YUKON TO NWFD. AND SOUTH TO CENT. CAL. N. DAK. AND N.Y.; SOUTH IN MTNS. TO N. GA. ALSO IN E. HEM. WINTERS SOUTH TO S. CAL. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
CAROLINA WREN **THRYOTHORUS LUDOVICIANUS**	# ABUNDANT	X	X	X								THROUGHOUT	RESIDENT MASS. TO NEB. AND SOUTH TO CENT. TEX. AND FLA. ALSO IN RIO GRANDE VALLEY.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
LONG-BILLED MARSH WREN **TELMATODYTES PALUSTRIS**	COMMON					X						THROUGHOUT	RESIDENT B.C. TO NEW BRUNS. AND SOUTH TO MEX., COLO., AND VA. ALSO ON COAST R.I. TO TEX. WINTERS IN BREEDING RANGE AND SOUTH THRU U.S. TO MEX.	PERM. RES. ON COAST. WINTERS INLAND	MINOR HABITAT ELIMINATION
SHORT-BILLED MARSH WREN **CISTOTHORUS PLATENSIS**	COMMON				X	X						THROUGHOUT	BREEDS NEW BRUNS. TO S. SASK. AND SOUTH TO ARK. AND VA. WINTERS MD. TO TENN. TO CENT. TEX. AND SOUTH.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ELIMINATION
MIMIDAE (MIMIC THRUSHES)															
MOCKINGBIRD **MIMUS POLYGLOTTOS**	# ABUNDANT	X	X	X	X			X				THROUGHOUT	RESIDENT NOVA SCOT. TO S. B.C. AND SOUTH TO BAJA AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
GRAY CATBIRD **DUMETELLA CAROLINENSIS**	# COMMON		X	X								THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO N.M. AND FLA. WINTERS VIR. TO ARK. TO MEX.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION
BROWN THRASHER **TOXOSTOMA RUFUM**	# COMMON	X	X	X	X							THROUGHOUT	BREEDS ME. TO S. ALB. AND SOUTH TO E. TEX. AND FLA. WINTERS MD. TO OKLA. AND SOUTH TO TEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
TURDIDAE (TRUE THRUSHES)															
AMERICAN ROBIN TURDUS MIGRATORIUS	ABUNDANT	X	X	X	X							THROUGHOUT	BREEDS FROM TREE LINE OF ARTIC SOUTH TO MEX, WINTERS THROUGHOUT CONTIN, U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
WOOD THRUSH HYLOCICHLA MUSTELINA	# COMMON	X	X	X								THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS ME, TO S, DAK, AND SOUTH TO E, TEX, AND FLA, WINTERS CENT AM,	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
HERMIT THRUSH CATHARUS GUTTATUS	COMMON	X	X	X								THROUGHOUT	BREEDS ALAS, TO NWFD AND SOUTH TO S, CAL., WISC, AND MD, WINTERS B.C, TO N.Y, AND SOUTH TO MEX,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
SWAINSON'S THRUSH CATHARUS USTULATUS	# RARE	X	X	X								THROUGHOUT	BREEDS ALAS, TO NWFD, AND SOUTH TO CENT CAL, AND W, VIR, WINTERS CENT, AND S, AM,	MIGRANT	MINOR HABITAT ELIMINATION
GRAY-CHEEKED THRUSH CATHARUS MINIMUS	# RARE	X	X	X								THROUGHOUT	BREEDS ALAS, TO NWFD, AND SOUTH TO B.C, AND N.Y, WINTERS IN INDIES, CENT, AND S, AM,	MIGRANT	MINOR HABITAT ELIMINATION
VEERY CATHARUS FUSESCENS	RARE	X	X	X								THROUGHOUT	BREEDS B.C, TO NWFD, AND SOUTH IN MTNS, TO ARIZ, AND N.M., ACROSS N, U.S, AND SOUTH IN MTNS, TO GA, WINTERS IN CENT, AND S, AM,	MIGRANT	MINOR HABITAT ELIMINATION
EASTERN BLUEBIRD SIALIA SIALIS	RARE			X	X							THROUGHOUT	BREEDS NWFD, TO S, ALB, AND SOUTH TO TEX, AND FLA, WINTERS IN S, 1/2 OF RANGE AND SOUTH; RESID, IN S, ARIZ,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
SYLVIIDAE (OLD WORLD WARBLERS)															
BLUE-GRAY GNATCATCHER POLIOPTILA CAERULEA	# COMMON	X	X	X								THROUGHOUT	BREEDS N.J, TO CENT, CAL, AND SOUTH TO MEX, WINTERS ON COAST VIR, TO TEX, AND ACROSS ARIZ., N.M, AND NEV, TO S, CAL,	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
GOLDEN-CROWNED KINGLET **REGULUS SATRAPA**	RARE	X	X	X								THROUGHOUT	BREEDS ALAS. TO NFLD. AND SOUTH TO S. CAL., MINN. AND N.Y., ALSO SOUTH IN APPLACH. TO TENN. WINTERS ALAS. TO NOVA SCOT. AND SOUTH TO BAJA AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
RUBY-CROWNED KINGLET **REGULUS CALENDULA**	ABUNDANT	X	X	X								THROUGHOUT	BREEDS ALAS. TO NWFD. AND SOUTH TO ALB. AND NOVA SCOT., ON COAST ALAS. TO WASH. AND IN MTNS B.C. TO ARIZ. AND N.M. WINTERS N.J. TO NEB. AND S. TO FLA. AND MEX., U.S. ROCKIES.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
MOTACILLIDAE (WAGTAILS)															
WATER PIPIT **ANTHUS SPINOLETTA**	COMMON				X	X						THROUGHOUT	BREEDS N. ALAS. TO GREENLD. AND SOUTH TO S. ALAS. AND NWFD. ALSO IN MTNS. B.C. TO ORE. AND UTAH, COLO., AND N.M. WINTERS B.C. TO UTAH AND SOUTH, ALSO MD. TO ARK. AND SOUTH MEX., FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
BOMBYCILLIDAE (WAXWINGS)															
CEDAR WAXWING **BOMBYCILLA CEDRORUM**	COMMON	X	X	X								THROUGHOUT	BREEDS S. ALAS. TO NWFD. AND SOUTH TO N. CAL. AND N. GA. WINTERS B.C. SOUTH TO CENT. CAL. AND EAST TO MASS. AND SOUTH TO FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
LANIIDAE (SHRIKES)															
LOGGERHEAD SHRIKE **LANIUS LUDOVICIANUS**	# COMMON				X							THROUGHOUT	BREEDS B.C. TO ME. AND SOUTH TO MEX. AND FLA. WINTERS SOUTH OF LAT 45 N.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
STURNIDAE (STARLINGS)															
STARLING **STURNUS VULGARIS**	# ABUNDANT	X	X	X	X							THROUGHOUT	INTROD. FROM E. HEM. RESIDENT THROUGH MOST OF CONTINENTAL U.S.	PERMANENT RESIDENT	MINOR HABITAT ELIM[illegible]

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
VIREONIDAE (VIREOS)															
WHITE-EYED VIREO *VIREO GRISEUS*	# COMMON			X								THROUGHOUT	BREEDS R.I. TO NEB. AND SOUTH TO E. TEX. AND CENT. GA. BREEDS ON COAST FLA. TO TEX AND CENT. AM.	SUMMER RESIDENT, SOME WINTER	MAJOR HABITAT ALTERATION
YELLOW-THROATED VIREO *VIREO FLAVIFRONS*	# RARE	X	X	X								THROUGHOUT	BREED ME. TO S. MAN. AND SOUTH TO E. TEX. AND FLA. WINTERS CENT AND S. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
SOLITARY VIREO *VIREO SOLITARIUS*	RARE	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO MEX. AND FLA. WINTERS N. CAR. TO BAJA AND SOUTH.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
BLACK-WHISKERED VIREO *VIREO ALTILOQUUS*	RARE			X								COASTAL AREAS	BREEDS FLA. AND CUBA. WINTERS S. AM. ALSO FOUND IN SUMMER MISS. TO TEX. ON COAST.	MIGRANT AND SUMMER RESIDENT	MINOR HABITAT ALTERATION
RED-EYED VIREO *VIREO OLIVACEUS*	ABUNDANT	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO WASH., COLO., E. TEX. AND FLA. WINTERS S. AM.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
PHILADELPHIA VIREO *VIREO PHILADELPHICUS*	RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO N. B.C. AND SOUTH TO S. B.C. AND N.H. WINTERS CENT. AND S. AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
WARBLING VIREO *VIREO GILVUS*	# RARE		X									THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO BAJA, CENT. TEX., LA. AND VIR. WINTERS CENT. AM.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
PARULIDAE (WOOD-WARBLERS)															
BLACK-AND-WHITE WARBLER *MNIOTILTA VARIA*	COMMON	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO CENT. TEX. AND S.C. WINTERS MEX., INDIES AND S. AM.	MIGRANT AND SUMMER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
BACHMAN'S WARBLER VERMIVORA BACHMANII	POSSIBLE		X									THROUGHOUT	ONCE BRED S. CAR. TO MO. AND SOUTH TO ARK. AND MISS. SEEN IN SUMMER N.C. TO LA. ON COAST. WINTERS IN CUBA.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
GOLDEN-WINGED WARBLER VERMIVORA CHRYSOPTERA	RARE	X	X	X								THROUGHOUT	BREEDS MASS. TO MAN. AND SOUTH TO IO. OHIO AND N. GA. WINTERS IN CENT. AND S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
BLUE-WINGED WARBLER VERMIVORA PINUS	RARE	X	X	X								THROUGHOUT	BREEDS N.H. TO NEB. AND SOUTH TO N. MISS. AND N. GA. WINTERS CENT. AND S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
TENNESSEE WARBLER VERMIVORA PEREGRINA	# COMMON	X	X	X								THROUGHOUT	BREEDS NWFD. TO S. YUKON AND SOUTH TO MONT. AND ME. WINTERS CENT. AND S. AM	MIGRANT	MINOR HABITAT ELIMINATION
ORANGE-CROWNED WARBLER VERMIVORA CELATA	# COMMON	X	X	X								THROUGHOUT	BREEDS N. QUE. TO ALAS. AND SOUTH TO BAJA AND TEX. AND ACROSS CAN. TO ONT. WINTERS N. CAL. TO CENT. TEX. AND FLA. AND SOUTH.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
NASHVILLE WARBLER VERMIVORA RUFICAPILLA	RARE	X	X	X	X							THROUGHOUT	BREEDS NOVA SCOT. TO S. B.C., SOUTH IN MTNS TO CENT. CAL. AND UTAH, ACROSS N. U.S. TO ILL. AND MD. WINTER IN TEX., FLA. AND CENT. AM.	MIGRANT	MINOR HABITAT ELIMINATION
NORTHERN PARULA PARULA AMERICANA	# ABUNDANT	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO S. MAN. AND SOUTH TO E. TEX. AND N. FLA. WINTERS CENT. AM. AND INDIES AND FLA.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
YELLOW WARBLER DENDROICA PETECHIA	# COMMON	X	X	X						X		THROUGHOUT	BREEDS ALAS. TO NWFD AND SOUTH TO S. CAL. AND N. GA. WINTERS CENT. AND S. AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
CHESTNUT-SIDED WARBLER DENDROICA PENSYLVANICA	RARE			X								THROUGHOUT	BREEDS NOVA SCOT. TO CENT. SASK. AND SOUTH TO NEB. AND MD., SOUTH IN MTNS. TO N. GA. WINTERS CENT. AM.	MIGRANT	MINOR HABITAT ALTERATION

1, UPLAND FOREST 6, BAYS AND/OR PONDS
*2, BOTTOMLAND FOREST 7, BUILDINGS *
*3, BRUSH 8, BEACHES *
*4, FIELDS 9, ISLANDS *
*5, MARSH 10, MUDFLATS *

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
CERULEAN WARBLER DENDROICA CERULEA	RARE		X	X								THROUGHOUT	BREEDS N.Y. TO NEB. AND SOUTH TO E. TEX. AND N. GA. WINTERS S. AM. CASUAL NEW ENG., CAL. AND MONT.	MIGRANT, SOME BREED	MINOR HABITAT ELIMINATION
BLACK-THROATED BLUE WARBLER DENDROICA CAERULESCENS	RARE	X		X						X		THROUGHOUT	BREEDS NOVA SCOT. TO CENT. SASK. AND SOUTH TO MINN. AND MASS., SOUTH IN MTNS. TO N. GA. WINTERS INDIES.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
PINE WARBLER DENDROICA PINUS	RARE	X	X	X						X		THROUGHOUT	BREEDS ME. TO S. ALB. AND SOUTH TO E. TEX. AND FLA. WINTERS S. CAR. TO ARK. AND SOUTH TO TEX. AND FLA.	PERM. RES. ALSO MIGRANT	MINOR HABITAT ELIMINATION
YELLOW-THROATED WARBLER DENDROICA DOMINICA	COMMON	X	X	X								THROUGHOUT	BREEDS CONN. TO NEB. AND SOUTH TO E. TEX. AND FLA. WINTERS S. TEX., S. CAR. TO FLA., INDIES. CASUAL IN WIN. ON GULF COAST.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
BLACK-THROATED GREEN WARBLER DENDROICA VIRENS	COMMON	X	X	X								THROUGHOUT	BREEDS NWFD. TO MCKEN. AND SOUTH TO ALB. AND MD., SOUTH IN MTNS. TO GA. WINTERS TEX., FLA., INDIES AND CENT. AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
PRAIRIE WARBLER DENDROICA DISCOLOR	RARE	X		X								THROUGHOUT	BREEDS N.H. TO N.D. AND SOUTH TO E. TEX. AND FLA. WINTERS S. FLA., INDIES AND CENT. AM.	MIGRANT AND SUMMER RESIDENT	MINOR HABITAT ELIMINATION
CAPE MAY WARBLER DENDROICA TIGRINA	RARE	X	X	X								THROUGHOUT	BREEDS NEW BRUNS. TO CENT. MCKEN. AND SOUTH TO N.D. AND VT. WINTERS INDIES	MIGRANT	MINOR HABITAT ELIMINATION
BLACKBURNIAN WARBLER DENDROICA FUSCA	RARE	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO SASK. AND SOUTH TO MINN. AND MASS., SOUTH IN MTNS. TO N. GA.	MIGRANT	MINOR HABITAT ELIMINATION
MAGNOLIA WARBLER DENDROICA MAGNOLIA	COMMON	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO CENT. MCKEN. AND SOUTH TO B.C. AND VIR. WINTERS INDIES CENT. AM., LA., FLA., AND VIR.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION

1, UPLAND FOREST	6, BAYS AND/OR PONDS
2, BOTTOMLAND FOREST	7, BUILDINGS
3, BRUSH	8, BEACHES
4, FIELDS	9, ISLANDS
5, MARSH	10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
YELLOW-RUMPED WARBLER **DENDROICA CORONATA**	# ABUNDANT	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO ALAS. AND SOUTH TO N. LIMITS OF U.S. ALSO IN WESTERN STATES WASH TO BAJA AND EAST TO TEX. WINTERS ME. TO ORE AND SOUTH TO CENT. AM. AND INDIES.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
PALM WARBLER **DENDROICA PALMARUM**	# RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO MCKEN. AND SOUTH TO S. ALB. AND ME. WINTERS N.C. TO TENN. AND SOUTH TO E. TEX. AND FLA. ALSO CENT. AM. AND INDIES.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
BLACKPOLL WARBLER **DENDROICA STRIATA**	RARE	X	X									THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO CENT. B.C. AND MASS. WINTERS S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
BAY-BREASTED WARBLER **DENDROICA CASTANEA**	# COMMON	X	X									THROUGHOUT	BREEDS NOVA SCOT. TO CENT. MAN. AND SOUTH TO MINN. AND N. HAMP. WINTERS CENT. AND S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
AMERICAN REDSTART **SETOPHAGA RUTICILLA**	# COMMON	X	X									THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO ORE., LA., AND GA. WINTERS CENT. AND S. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION
OVENBIRD **SEIURUS AUROCAPILLUS**	# RARE			X								THROUGHOUT	BREEDS NWFD. TO N. B.C. AND SOUTH TO ARK. AND GA. WINTERS S.C. TO MEX. ON COAST AND CENT. AND S. AM.	MIGRANT SOME WINTER	MINOR HABITAT ALTERATION
NORTHERN WATERTHRUSH **SEIURUS NOVEBORACENSIS**	RARE	X	X	X								THROUGHOUT	BREEDS NWFD. TO CAN. AND SOUTH TO IDA. AND MASS. WINTERS INDIES, CENT. AND S. AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
LOUISIANA WATERTHRUSH **SEIURUS MOTACILLA**	# RARE	X	X	X								THROUGHOUT	BREEDS R.I. TO NEB. AND SOUTH TO E. TEX. AND GA. WINTERS INDIES, CENT. AND S. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
SWAINSON'S WARBLER LIMNOTHLYPIS SWAINSONII	RARE		X	X	X							THROUGHOUT	BREEDS MD. TO OKLA. AND SOUTH TO LA. AND N. FLA. WINTERS INDIES, CENT. AM.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
WORM-EATING WARBLER HELMITHEROS VERMIVORUS	# RARE	X										THROUGHOUT	BREEDS MASS. TO IA. AND SOUTH TO E. TEX., LA., TENN. AND N.C. WINTERS INDIES AND CENT. AM.	MIGRANT AND SUMMER RESIDENT	MINOR HABITAT ELIMINATION
PROTHONOTARY WARBLER PROTONOTARIA CITREA	# COMMON		X									THROUGHOUT	BREEDS N.Y. TO MINN. AND SOUTH TO E TEX. AND FLA. WINTERS CENT. AND S. AM. CASUAL CAL., ARIZ., WYO., N.H.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
COMMON YELLOWTHROAT GEOTHLYPIS TRICHAS	# COMMON		X	X		X						THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO BAJA AND FLA. WINTERS ON COAST S.C. TO TEX. AND ACROSS S.W. TO CAL. ALSO IN CENT. AM.	PERM. RES. ALSO MIGRANT	MINOR HABITAT ELIMINATION
KENTUCKY WARBLER OPORORNIS FORMOSUS	# COMMON	X	X	X								THROUGHOUT	BREEDS CONN. TO NEB. AND SOUTH TO E. TEX. AND N. FLA. WINTERS CENT. AND S. AM.	SUMMER RESIDENT	MINOR HABITAT ELIMINATION
HOODED WARBLER WILSONIA CITRINA	# COMMON		X	X								THROUGHOUT	BREEDS R.I. TO NEB. AND SOUTH TO E. TEX. AND FLA. WINTERS IN CENT. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
WILSON'S WARBLER WILSONIA PUSILLA	RARE			X								THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO S. SASK. AND ME., ALSO SOUTH IN MTNS. TO S. CAL. AND N.M. WINTERS CENT. AM.	MIGRANT AND WINTER RESIDENT	MINOR HABITAT ALTERATION
CANADA WARBLER WILSONIA CANADENSIS	RARE			X								THROUGHOUT	BREEDS CENT. QUE. TO N. ALB. AND SOUTH TO MINN. AND N.Y., SOUTH IN MTNS. TO N. GA. WINTERS S. AM.	MIGRANT	MINOR HABITAT ALTERATION
YELLOW-BREASTED CHAT ICTERIA VIRENS	COMMON			X								THROUGHOUT	BREEDS N.Y. TO B.C. AND SOUTH TO BAJA TEX. AND FLA. WINTERS TEX., CENT. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ALTERATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME		OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
PLOCEIDAE (WEAVER FINCH)																
HOUSE SPARROW **PASSER DOMESTICUS**	#	ABUNDANT				X			X				THROUGHOUT	RESIDENT THROUGHOUT N. AM. INTRODUCED FROM E. HEM.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
ICTERIDAE (BLACKBIRDS, ORIOLES AND MEADOWLARKS)																
BOBOLINK **DOLICHONYX ORYZIVORUS**		RARE			X	X	X						THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO N. CAL. AND PENN. WINTERS S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
EASTERN MEADOWLARK **STURNELLA MAGNA**		ABUNDANT				X							THROUGHOUT	RESIDENT NOVA SCOT. TO S. DAK. AND SOUTH TO E. TEX. AND FLA., ALSO IN ARIZ. AND N.M.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
YELLOW-HEADED BLACKBIRD **XANTHOCEPHALUS XANTHOCEPHALUS**		RARE				X	X						THROUGHOUT	BREEDS MAN. TO B.C. AND SOUTH TO S. CAL. AND ARK. WINTERS LA. TO CENT. CAL. AND SOUTH TO MEX.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
RED-WINGED BLACKBIRD **AGELAIUS PHOENICEUS**	#	ABUNDANT		X		X	X						THROUGHOUT	BREEDS NOVA SCOT. TO YUKON AND SOUTH TO BAJA AND FLA. WINTERS FLA TO B.C. AND OCCAS. NORTHWARD IN E. U.S.	PERM. RES. ALSO MIGRANT	MINOR HABITAT ELIMINATION
ORCHARD ORIOLE **ICTERUS SPURIUS**	#	COMMON	X	X	X	X							THROUGHOUT	BREEDS MASS. TO S. MAN. AND SOUTH TO MEX. AND FLA. WINTERS CENT. AND S. AM	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
NORTHERN ORIOLE **ICTERUS GALBULA**		RARE	X	X	X	X							THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO BAJA AND GA. WINTERS CENT. AND SOUTH AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
RUSTY BLACKBIRD **EUPHAGUS CAROLINUS**		COMMON	X	X	X	X							THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO B.C. AND ME. WINTERS ME. TO B.C. AND SOUTH TO TEX. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
BREWER'S BLACKBIRD EUPHAGUS CYANOCEPHALUS	RARE	X	X	X	X							THROUGHOUT	BREEDS ONT. TO B.C. AND SOUTH TO BAJA AND TEX. WINTERS N.C. TO OKLA. TO MAN; AND SOUTH TO MEX. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
BOAT-TAILED GRACKLE CASSIDIX MAJOR	# COMMON			X	X	X						COASTAL AREAS	BREEDS N.J. TO E. TEX. ON COAST. WINTERS VIR. TO E. TEX. ON COAST.	PERMANENT RESIDENT	MAJOR HABITAT ELIMINATION
COMMON GRACKLE QUISCALUS QUISCULA	# COMMON		X	X	X							THROUGHOUT	BREEDS NWFD. TO N. B.C. AND SOUTH TO E. TEX. AND FLA; WINTERS MD. TO WYO; AND SOUTH IN BREEDING RANGE.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
BROWN-HEADED COWBIRD MOLOTHRUS ATER	# ABUNDANT			X	X							THROUGHOUT	BREEDS NOVA SCOT. TO N. B.C. AND SOUTH TO BAJA AND S.C. WINTERS MASS. TO N. CAR. AND SOUTH TO MEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
THRAUPIDAE (TANAGERS)															
WESTERN TANAGER PIRANGA LUDOVICIANA	RARE	X	X									SOUTHERN HALF	BREEDS W. MCKEN. TO ALAS. AND SOUTH TO BAJA AND W. TEX. WINTERS CENT. CAL. TO W. TEX. AND SOUTH TO CENT AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
SCARLET TANAGER PIRANGA OLIVACEA	RARE	X	X									THROUGHOUT	BREEDS N. BRUNS. TO S. MAN; AND SOUTH TO OKLA. AND S.C. WINTERS S. AM.	MIGRANT	MINOR HABITAT ELIMINATION
SUMMER TANAGER PIRANGA RUBRA	# COMMON	X	X									THROUGHOUT	BREEDS MD. TO S. NEV. AND SOUTH TO BAJA AND FLA. WINTERS CENT. AND S. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
FRINGILLIDAE (FINCHES)															
NORTHERN CARDINAL CARDINALIS CARDINALIS	# ABUNDANT	X	X	X	X							THROUGHOUT	RESIDENT CONN. TO S. DAK. AND SOUTH TO TEX. AND FLA. ALSO ARIZ., N.M. AND S. CAL.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
ROSE-BREASTED GROSBEAK PHEUCTICUS LUDOVICIANUS	# RARE	X	X	X								THROUGHOUT	BREEDS NOVA SCOT. TO N. B.C. AND SOUTH TO KAN. AND PENN., SOUTH IN MTNS. TO N. GA. WINTERS LA. AND CENT. AND SOUTH AM.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
BLACK-HEADED GROSBEAK PHEUCTICUS MELANOCEPHALUS	RARE	X	X									THROUGHOUT	BREEDS S. SASK. TO S. B.C. AND SOUTH TO BAJA, TEX. AND MEX. WINTERS LA. AND CENT. AM.	VISITS THROUGHOUT YEAR	MINOR HABITAT ELIMINATION
BLUE GROSBEAK GUIRACA CAERULEA	# COMMON	X		X	X							THROUGHOUT	BREEDS N.J. TO CENT. CAL. AND SOUTH TO BAJA AND FLA. WINTERS CENT. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MAJOR HABITAT ELIMINATION
INDIGO BUNTING PASSERINA CYANEA	# COMMON			X								THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS NEW BRUNS. TO S. MAN. AND SOUTH TO E. TEX. AND FLA. WINTERS CENT. AND S. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MAJOR HABITAT ALTERATION
PAINTED BUNTING PASSERINA CIRIS	# COMMON	X	X	X								THROUGHOUT	BREEDS N.C. TO N.M. AND SOUTH TO MEX. AND FLA. WINTERS LA., FLA., INDIES, CENT. AM.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION
DICKCISSEL SPIZA AMERICANA	COMMON				X							THROUGHOUT	BREEDS MASS. TO MONT. AND SOUTH TO TEX. AND S.C. WINTERS CENT. AM.	SUMMER RESIDENT, SOME WINTER	MINOR HABITAT ELIMINATION
EVENING GROSBEAK HESPERIPHONA VESPERTINA	RARE	X	X									THROUGHOUT	BREEDS NEW BRUNS. TO N. B.C. AND SOUTH TO ARIZ. AND N.M. IN MTNS. ALSO ACROSS S. CAN. WINTERS NOVA SCOT. TO KAN. TO B.C. AND SOUTH TO MEX. AND FLA	WINTER VISITOR	MINOR HABITAT ELIMINATION
PURPLE FINCH CARPODACUS PURPUREUS	COMMON	X	X	X								THROUGHOUT	BREEDS NWFD. TO N. B.C. AND SOUTH TO S. CAL., N.M., N.D. AND N.Y. WINTERS NOVA SCOT. TO S. MAN. AND S. TO TEX. AND FLA. ALSO B.C. SOUTH TO BAJA AND N.M.	WINTER RESIDENT	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BAYS AND/OR PONDS
7. BUILDINGS
8. BEACHES
9. ISLANDS
10. MUDFLATS

COMMON AND SCIENTIFIC NAME		OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
PINE SISKIN **SPINUS PINUS**		RARE	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS NOVA SCOT, TO ALAS, AND SOUTH TO BAJA AND FLA, WINTERS IN BREEDING RANGE AT LOW ALTITUDES,	WINTER VISITOR	MINOR HABITAT ELIMINATION
AMERICAN GOLDFINCH **SPINUS TRISTIS**		COMMON			X	X							THROUGHOUT	BREEDS NOVA SCOT, TO B,C, AND SOUTH TO BAJA, UTAH AND S,C, WINTERS NOVA SCOT, TO B,C, AND SOUTH TO MEX, AND FLA,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
RUFOUS-SIDED TOWHEE **PIPILO ERYTHROPHTHALMUS**	#	COMMON			X								THROUGHOUT	BREEDS ME, TO B,C, AND SOUTH TO CENT, AM, WINTERS N,Y, TO KAN, TO B,C, AND SOUTH TO MEX,	WINTER RESIDENT, SOME PERMANENT	MAJOR HABITAT ALTERATION
SAVANNAH SPARROW **PASSERCULUS SANDWICHENSIS**	#	ABUNDANT			X	X	X						THROUGHOUT	BREEDS LOCALLY LAB, TO ALAS, AND SOUTH TO MEX,, MO,, AND MD, WINTERS MASS, TO OKLA, TO B,C, AND SOUTH TO INDIES AND CENT, AM,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
GRASSHOPPER SPARROW **AMMODRAMUS SAVANNARUM**		RARE			X	X							THROUGHOUT	BREEDS ME, TO B,C, AND SOUTH TO S, CAL,, NEV,, TEX, AND N, FLA, WINTERS N, CAR, TO CENT, CAL, AND SOUTH TO CENT, AM, AND INDIES,	WINTER RESIDENT, SOME BREED	MINOR HABITAT ELIMINATION
LE CONTE'S SPARROW **AMMOSPIZA LECONTEII**		RARE			X	X							THROUGHOUT	BREEDS ONT, TO S, MCKEN, AND SOUTH TO MONT, AND WISC, WINTERS S,C, TO KAN, AND SOUTH TO TEX, AND FLA,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
SHARP-TAILED SPARROW **AMMOSPIZA CAUDACUTA**		COMMON					X						THROUGHOUT	BREEDS MAN, TO N, B,C, AND SOUTH TO MONT, AND N,D, ALSO QUE, TO N,C, ON COAST, WINTERS N,Y, TO MEX,	WINTER RESIDENT	MINOR HABITAT ELIMINATION
SEASIDE SPARROW **AMMOSPIZA MARITIMA**		COMMON					X			X			COASTAL AREAS	BREEDS N,Y, TO TEX, ON COAST, WINTERS VIR, TO TEX, ON COAST,	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION

1, UPLAND FOREST
2, BOTTOMLAND FOREST
3, BRUSH
4, FIELDS
5, MARSH
6, BAYS AND/OR PONDS
7, BUILDINGS
8, BEACHES
9, ISLANDS
10, MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
VESPER SPARROW **POOECETES GRAMINEUS**	COMMON			X	X							THROUGHOUT	BREEDS NOVA SCOT. TO B.C. AND SOUTH TO CENT. CAL. AND N.C. WINTERS CT. TO CENT. CAL. AND SOUTH TO BAJA AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
LARK SPARROW **CHONDESTES GRAMMACUS**	RARE			X	X							THROUGHOUT	BREEDS N.Y. TO S. B.C. AND SOUTH TO BAJA AND S.C. WINTERS CENT. CAL. TO N. FLA. AND SOUTH TO MEX.	MIGRANT AND SUMMER RESIDENT SOME WINT.	MINOR HABITAT ELIMINATION
DARK-EYED JUNCO **JUNCO HYEMALIS**	COMMON	X	X	X								THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO BAJA, IDA., CENT. ALB. AND MASS., SOUTH TO N. GA. IN MTNS. WINTERS N.H. TO WASH. AND SOUTH TO MEX. ALSO TO ALAS. ON COAST.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
CHIPPING SPARROW **SPIZELLA PASSERINA**	COMMON	X		X	X							THROUGHOUT EXCEPT COASTAL MARSHES	BREEDS NWFD. TO MCKEN. AND SOUTH TO CENT. AM. WINTERS MD. TO CENT. CAL. AND SOUTH TO CENT. AM.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
FIELD SPARROW **SPIZELLA PUSILLA**	COMMON			X	X							THROUGHOUT	BREEDS ME. TO MONT. AND SOUTH TO TEX. AND GA. WINTERS MASS. TO KAN. AND SOUTH TO MEX. AND FLA.	PERMANENT RESIDENT	MINOR HABITAT ELIMINATION
WHITE-CROWNED SPARROW **ZONOTRICHIA LEUCOPHRYS**	RARE			X	X							THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO CAL., N.M., CENT. ALB. AND QUE. WINTERS N.C. TO B.C. AND SOUTH TO MEXICO AND INDIES.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINATION
WHITE THROATED SPARROW **ZONOTRICHIA ALBICOLLIS**	ABUNDANT			X								THROUGHOUT	BREEDS NWFD. TO YUKON AND SOUTH TO B.C. AND W. VA. WINTERS MASS. TO N. CAL. AND SOUTH TO MEX. AND FLA.	WINTER RESIDENT, SOME FOUND IN SUMMER	MINOR HABITAT ALTERATION
FOX SPARROW **PASSERELLA ILIACA**	RARE			X								THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO S. CAL., COLO., CENT. ALB. AND QUE. WINTERS ME. TO UTAH AND SOUTH TO N.M. AND FLA. ALSO B.C. TO BAJA.	WINTER RESIDENT	MINOR HABITAT ALTERATION

1. UPLAND FOREST	6. BAYS AND/OR PONDS
2. BOTTOMLAND FOREST	7. BUILDINGS
3. BRUSH	8. BEACHES
4. FIELDS	9. ISLANDS
5. MARSH	10. MUDFLATS

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	SEASONAL STATUS	IMPACT OF PROJECT
LINCOLNIS SPARROW MELOSPIZA LINCOLNII	# RARE			X	X							THROUGHOUT	BREEDS LAB. TO ALAS. AND SOUTH TO S. CAL., N.M., S. MAN. AND NOVA SCOT. WINTERS GA. TO N. CAL. AND SOUTH TO CENT. AM. AND FLA.	MIGRANT SOME WINTER	MINOR HABITAT ELIMINAITON
SWAMP SPARROW MELOSPIZA GEORGIANA	# COMMON		X		X	X						THROUGHOUT	BREEDS NWFD. TO MCKEN. AND SOUTH TO MO. AND MD. WINTERS MASS. TO NEB. AND SOUTH TO TEX. AND FLA.	WINTER RESIDENT	MINOR HABITAT ELIMINATION
SONG SPARROW MELOSPIZA MELODIA	# COMMON			X								THROUGHOUT	BREEDS NWFD. TO ALAS. AND SOUTH TO BAJA, N.M., NEB., ARK. AND S.C. WINTERS NOVA SCOT. TO B.C. TO ALAS. AND SOUTH TO MEX. AND FLA.	WINTER RESIDENT	MAJOR HABITAT ALTERATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BUILDINGS
7. FRESH WATER
8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
DIDELPHIDAE (OPOSSUMS)														
VIRGINIA OPOSSUM **DIDELPHIS VIRGINIANA**	COMMON	X	X	X	X	X	X					THROUGHOUT	EAST OF PLAINS, WEST OF SIERRA-CASCADE CHAIN.	MINOR HABITAT ELIMINATION
SORICIDAE (SHREWS)														
LEAST SHREW **CRYPTOTIS PARVA**	COMMON			X	X	X						THROUGHOUT EXCEPT E. COASTAL MARSHES	N.Y. TO NEB. AND SOUTH TO TEX. AND FLA.	MAJOR HABITAT ELIMINATION TEMPORARY TURBIDITY
SHORT-TAILED SHREW **BLARINA BREVICAUDA**	COMMON	X	X	X	X	X						THROUGHOUT EXCEPT COASTAL MARSHES	ME. TO N. DAK. AND SOUTH TO TEX. AND FLA.	MINOR HABITAT ELIMINATION
TALPIDAE (MOLES)														
EASTERN MOLE **SCALOPUS AQUATICUS**	RARE	X		X	X							THROUGHOUT EXCEPT COASTAL MARSHES	MASS. TO NEB. AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION
VESPERTILIONIDAE (PLAINNOSE BATS)														
SOUTHEASTERN MYOTIS **MYOTIS AUSTRORIPARIUS**	RARE	X	X				X					THROUGHOUT EXCEPT S W. CORNER	MISSISSIPPI RIVER VALLEY AND COASTAL AREAS FROM LA. TO NW FLA.	MINOR HABITAT ELIMINATION
EASTERN PIPISTRELLE **PIPISTRELLUS SUBFLAVUS**	UNCOMMON	X	X		X		X					THROUGHOUT EXCEPT COASTAL MARSHES	MAINE TO MINN. AND SOUTH TO TEXAS AND FLORIDA.	MINOR HABITAT ELIMINATION

MAMMALS

1. UPLAND FOREST	5. MARSH
2. BOTTOMLAND FOREST	6. BUILDINGS
3. BRUSH	7. FRESH WATER
4. FIELDS	8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	GENERAL HABITAT 1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
BIG BROWN BAT **EPTESICUS FUSCUS**	UNCOMMON	X	X		X		X					THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT EXCEPT COASTAL LOUISIANA.	MINOR HABITAT ELIMINATION
RED BAT **LASIURUS BOREALIS**	COMMON	X	X		X	X	X					THROUGHOUT EXCEPT E. COASTAL MARSHES	THROUGHOUT EXCEPT NORTHERN AND EASTERN GREAT BASIN AND S. FLA.	MINOR HABITAT ELIMINATION
SEMINOLE BAT **LASIURUS SEMINOLUS**	COMMON	X	X			X						THROUGHOUT	ATLANTIC AND GULF COASTAL PLAINS EXCEPT SOUTHERN FLA.	MINOR HABITAT ELIMINATION
HOARY BAT **LASIURUS CINEREUS**	RARE	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT EXCEPT MARSHES OF GULF COAST AND SOUTHERN FLA.	MINOR HABITAT ELIMINATION
NORTHERN YELLOW BAT **LASIURUS INTERMEDIUS**	COMMON	X	X			X						SOUTHERN HALF	ATLANTIC AND GULF COASTAL PLAINS, VIRGINIA TO TEX.	MINOR HABITAT ELIMINATION
EVENING BAT **NYCTICEIUS HUMERALIS**	# ABUNDANT	X	X				X					THROUGHOUT EXCEPT COASTAL MARSHES	N.J. TO KAN. AND SOUTH TO E. TEX. AND FLA.	MINOR HABITAT ELIMINATION
RAFINESQUE'S BIG-EARED BAT **PLECOTUS RAFINESQUII**	UNCOMMON	X	X		X		X					THROUGHOUT EXCEPT COASTAL MARSHES	VIR. TO MISSOURI AND SOUTH TO LA. AND FLA.	MINOR HABITAT ELIMINATION
MOLOSSIDAE (FREE-TAILED BATS)														
BRAZILIAN FREE-TAILED BAT. **TADARIDA BRASILIENSIS**	# COMMON	X	X				X					THROUGHOUT EXCEPT COASTAL MARSHES	NEB. TO CALIF. AND SOUTH TO MEX. ALSO LA., MISS., ALA., GA., AND N. FLA.	MINOR HABITAT ELIMINATION

1, UPLAND FOREST	5, MARSH
2, BOTTOMLAND FOREST	6, BUILDINGS
3, BRUSH	7, FRESH WATER
4, FIELDS	8, MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
URSIDAE (BEARS)														
AMERICAN BLACK BEAR **EUARCTOS AMERICANUS**	RARE		X			X						ATCH, BASIN	FORMERLY THROUGHOUT EXCEPT ARID SW, NOW EXTIRPATED THROUGH MOST OF RANGE,	MINOR HABITAT ELIMINATION
PROCYONIDAE (RACCOONS)														
NORTHERN RACCOON **PROCYON LOTOR**	# ABUNDANT	X	X		X	X						THROUGHOUT	THROUGHOUT EXCEPT PARTS OF GREAT BASIN,	MINOR HABITAT ELIMINATION
MUSTELIDAE (WEASELS ETC,)														
LONG-TAILED WEASEL **MUSTELA FRENATA**	RARE	X	X	X	X	X						SOUTH-CENTRAL AND NORTH AREAS	THROUGHOUT EXCEPT PARTS OF NEW MEX,, ARIZ,, NEV, AND CALIF,	MINOR HABITAT ELIMINATION
NORTH AMERICAN MINK **MUSTELA VISON**	# ABUNDANT		X			X						THROUGHOUT	THROUGHOUT EXCEPT S, CALIF,, NEV,, ARIZ,, NEW MEX, AND W, TEX,	MINOR HABITAT ELIMINATION
NEARCTIC RIVER OTTER **LUTRA CANADENSIS**	# COMMON		X			X						THROUGHOUT	THROUGHOUT EXCEPT DESERTS OF NEV,, UTAH, S, CALIF,, ARIZ,, TEX, AND NEW MEX,	MINOR HABITAT ELIMINATION
SPOTTED SKUNK **SPILOGALE PUTORIUS**	RARE	X	X	X	X	X	X					FLORIDA PARISHES AND S,W, PARISHES	MINN, TO WASH, SOUTH TO MEX, AND TEX, ALSO VIR, TO MO, AND SOUTH TO LA, AND FLA,	MINOR HABITAT ELIMINATION
STRIPED SKUNK **MEPHITIS MEPHITIS**	# COMMON	X	X	X	X		X					THROUGHOUT EXCEPT E, COASTAL MARSHES	THROUGHOUT EXCEPT ARIZ, DESERT,	MINOR HABITAT ELIMINATION

MAMMALS

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BUILDINGS
7. FRESH WATER
8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
CANIDAE (FOX, WOLF ETC.)														
COYOTE CANIS LATRANS	# UNCOMMON	X	X	X	X							WEST OF MISS. RIVER AND N. OF BAT. ROUGE	OHIO TO WASH. AND SOUTH TO MEX. AND TEX.	MINOR HABITAT ELIMINATION
RED WOLF CANIS RUFUS	RARE	X	X	X	X	X						ONCE NW2/3 NOW CAMER. VERMILLION PARISHES	FORMERLY MISS. VALLEY TO BATON ROUGE AND E. TEX. NOW COASTAL TEX. FROM NUECES COUNTY NORTH.	MINOR HABITAT ELIMINATION
RED FOX VULPES FULVA	# RARE	X	X	X	X	X						THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT EXCEPT WESTERN PRAIRIE, CALIF. COAST, S. CALIF. DESERT, ARIZ. AND SOUTH ATLANTIC COASTAL PLAIN.	MINOR HABITAT ELIMINATION
GRAY FOX UROCYON CINEREOARGENTEUS	UNCOMMON	X	X	X	X							THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT EXCEPT WASH., E. ORE., IDA., MONT., WYO., N. NEV., NW UTAH, W. N. DAK., W. S. DAK., W. NEBR., KAN. AND W. OKLA.	MINOR HABITAT ELIMINATION
FELIDAE (CATS)														
BOBCAT LYNX RUFUS	# UNCOMMON	X	X	X	X							THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT.	MINOR HABITAT ELIMINATION
SCIURIDAE (SQUIRRELS)														
FOX SQUIRREL SCIURUS NIGER	# COMMON	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	EAST OF ROCKIES EXCEPT N.Y., N. JER. AND N. ENG.	MINOR HABITAT ELIMINATION
GRAY SQUIRREL SCIURUS CAROLINENSIS	# COMMON	X	X									THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT EAST OF PLAINS.	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BUILDINGS
7. FRESH WATER
8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
SOUTHERN FLYING SQUIRREL **GLAUCOMYS VOLANS**	COMMON	X	X				X					THROUGHOUT EXCEPT COASTAL MARSHES	EAST OF PLAINS EXCEPT S. FLA. AND NEW ENG.	MINOR HABITAT ELIMINATION
CASTORIDAE (BEAVER)														
AMERICAN BEAVER **CASTOR CANADENSIS**	RARE		X									FLA. PAR. ATCH. BASIN AND NORTH HALF	FORMERLY THROUGHOUT EXCEPT FLA. AND PARTS OF CALIF., NEV., UTAH, AND ARIZ. NOW MOSTLY IN N. MOUNTAIN STS.	MINOR HABITAT ELIMINATION
CRICETIDAE (MICE, RATS)														
EASTERN HARVEST MOUSE **REITHRODONTOMYS HUMULIS**	RARE			X	X	X						FLA. PAR. AND W. OF RED RIVER	MD. TO ARK. AND SOUTH TO SE TEX. AND FLA.	MINOR HABITAT ELIMINATION
FULVOUS HARVEST MOUSE **REITHRODONTOMYS FULVESCENS**	#COMMON			X	X							THROUGHOUT EXCEPT E. COASTAL MARSHES	LA., ARK., TEX. AND SE ARIZ.	MAJOR HABITAT ELIMINATION TEMPORARY TURBIDITY
WHITE-FOOTED MOUSE **PEROMYSCUS LEUCOPUS**	#COMMON	X	X	X								THROUGHOUT EXCEPT COASTAL MARSHES	EAST OF ROCKIES EXCEPT S. ATL. COAST. PLAIN AND GULF COASTAL PLAIN. ALSO FOUND IN N. MEX. AND ARIZ.	MINOR HABITAT ELIMINATION
COTTON MOUSE **PEROMYSCUS GOSSYPINUS**	#COMMON	X	X	X								THROUGHOUT EXCEPT COASTAL MARSHES	S. ATL. COASTAL PLAIN AND MISS., ALA., E. TEX. AND S. ARK.	MINOR HABITAT ELIMINATION
EASTERN WOOD RAT **NEOTOMA FLORIDANA**	#COMMON		X	X			X					THROUGHOUT EXCEPT COASTAL MARSHES	N.Y. TO S. DAK. (NOT IN MOST OF OHIO IND. AND ILL.) AND SOUTH TO CENT. TEX. AND N. FLA.	MINOR HABITAT ELIMINATION

1. UPLAND FOREST
2. BOTTOMLAND FOREST
3. BRUSH
4. FIELDS
5. MARSH
6. BUILDINGS
7. FRESH WATER
8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT	
MARSH RICE RAT **ORYZOMYS PALUSTRIS**	# ABUNDANT		X		X	X						THROUGHOUT	N. JER. TO KAN. AND SOUTH TO E. TEX. AND FLA.	MINOR HABITAT ELIMINATION	
HISPID COTTON RAT **SIGMODON HISPIDUS**	# COMMON			X	X	X						THROUGHOUT	VIR. THROUGH MISSOURI AND KEN. TO ARIZ. AND SOUTH TO TEX. AND FLA.	MAJOR HABITAT ELIMINATION	TEMPORARY TURBIDITY
MURIDAE (OLD WORLD RATS AND MICE)															
NORWAY RAT **RATTUS NORVEGICUS**	# COMMON						X					THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT, ESPECIALLY NEAR PEOPLE.	NO SIGNIFICANT CHANGE	
ROOF RAT **RATTUS RATTUS**	# COMMON						X					THROUGHOUT	THROUGHOUT, ESPECIALLY NEAR PEOPLE.	NO SIGNIFICANT CHANGE	
HOUSE MOUSE **MUS MUSCULUS**	# COMMON			X	X		X					THROUGHOUT EXCEPT COASTAL MARSHES	THROUGHOUT, ESPECIALLY NEAR PEOPLE.	NO SIGNIFICANT CHANGE	
CAPROMYIDAE (NUTRIA)															
NUTRIA **MYOCASTOR COYPUS**	# ABUNDANT		X			X						THROUGHOUT	INTRODUCED FROM CHILE AND ARGENTINA. LOCALLY IN US WHERE ESCAPED.	MINOR HABITAT ELIMINATION	
LEPORIDAE (RABBITS)															
EASTERN COTTONTAIL **SYLVILAGUS FLORIDANUS**	# COMMON	X	X	X	X							THROUGHOUT EXCEPT COASTAL MARSHES	EAST OF ROCKIES, ALSO ARIZ. AND N. MEX.	MINOR HABITAT ELIMINATION	

1. UPLAND FOREST	5. MARSH
2. BOTTOMLAND FOREST	6. BUILDINGS
3. BRUSH	7. FRESH WATER
4. FIELDS	8. MARINE

COMMON AND SCIENTIFIC NAME	OCC IN PROJ AREA	1	2	3	4	5	6	7	8	9	0	RANGE IN LOUISIANA	RANGE IN UNITED STATES	IMPACT OF PROJECT
SWAMP RABBIT SYLVILAGUS AQUATICUS	# COMMON	X	X			X						THROUGHOUT	MISS. VALLEY AND E. OKLA., E. TEX., MISS. AND ALA.	MINOR HABITAT ELIMINATION
CERVIDAE (DEER)														
WHITE-TAILED DEER ODOCOILEUS VIRGINIANUS	# COMMON	X	X	X	X	X						THROUGHOUT	THROUGHOUT EXCEPT CALIF., NEV., UTAH, AND PARTS OF ORE., IDA., COLO., N. MEX. AND ARIZ.	MINOR HABITAT ELIMINATION
DASYPODIDAE (ARMADILLOS)														
NINE-BANDED ARMADILLO DASYPUS NOVEMCINCTUS	# COMMON	X	X	X	X							THROUGHOUT EXCEPT E. COASTAL MARSHES	TEX., OKLA., SE KAN., SW MISSOURI, ARK., LA., SW MISS., S. ALA. AND FLA.	MINOR HABITAT ELIMINATION
DELPHINIDAE (DOLPHINS)														
SPOTTED DOLPHIN STENELLA PLAGIODON	COMMON								X			COASTAL WATERS	N. CAR. TO TEX.	NO SIGNIFICANT CHANGE
ATLANTIC BOTTLE-NOSED DOLPHIN TURSIOPS TRUNCATUS	COMMON								X			COASTAL WATERS	CAPE COD TO MEXICO.	NO SIGNIFICANT CHANGE

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APPENDIX C

UNIT I

CATCH OF FISHES BY 16' TRAWL — BAYOU TECHE — 8-10 May, 1975

SPECIES	STATIONS (wt. in grams) (N=Upstream S=Downstream) 1N Wt.	1N No.	1S Wt.	1S No.	2N Wt.	2N No.	2S Wt.	2S No.	3N Wt.	3N No.	3S Wt.	3S No.	4N Wt.	4N No.	4S Wt.	4S No.
Ictalurus punctatus (Channel catfish)	204.3	4	-0-		30.6	1	88.0	2	93.7	3	45.0	1	111.7	4	61.9	2
Ictalurus furcatus (Blue Catfish)	-0-		-0-		334.8	4	132.7	1	-0-		32.6	1	-0-		-0-	
Trinectes maculatus (Hogchoker)	-0-		-0-		-0-		-0-		4.5	1	19.3	5	-0-		10.3	1
Aplodinotus grunniens (Freshwater Drum)	-0-		-0-		-0-		-0-		-0-		90.5	2	43.5	1	-0-	
Ictiobus bubalus (Smallmouth Buffalo)	-0-		-0-		-0-		-0-		-0-		522.0	2	-0-		-0-	

UNIT I (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- BAYOU TECHE -- 8-10 MAY, 1975

	5N		5S		6N		6S		7N		7S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Ictalurus punctatus (Channel catfish)	15.6	1	198.4	7	1166.0	42	1566.9	45	2406.0	39	1440.6	45	7428.7	196
Ictalurus furcatus (Blue catfish)	51.7	4	277.2	12	115.1	3	293.4	5	886.5	14	330.3	10	2454.3	54
Trinectes maculatus (Hogchoker)	-0-		45.7	7	27.1	4	13.4	2	-0-		27.2	3	147.5	23
Aplodinotus grunniens (Freshwater Drum)	-0-		-0-		24.1	3	80.6	4	-0-		-0-		238.7	10
Ictiobus bubalus (Smallmouth Buffalo)	-0-		704.6	2	-0-		302.6	1	-0-		108.1	1	1637.3	6

UNIT I (Cont'd)

CATCH OF FISHES BY 16' TRAWL — BAYOU TECHE — 8-10 May, 1975

SPECIES	STATIONS	(wt. in grams)			(N=Upstream		S=Downstream)									
	1N		1S		2N		2S		3N		3S		4N		4S	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
<u>Noturus nocturnus</u> (Freckled Madton)	5.2	1	-0-		-0-		-0-		-0-		-0-		-0-		-0-	
<u>Morone saxatilis</u> (Striped Bass)	-0-		-0-		-0-		-0-		-0-		113.9	2	-0-		-0-	
<u>Dorosoma petenense</u> (Threadfin Shad)	-0-		-0-		-0-		-0-		-0-		193.3	4	-0-		-0-	
<u>Dorosoma cepedianum</u> (Gizzard Shad)	-0-		-0-		-0-		-0-		-0-		-0-		-0-		-0-	
<u>Anchoa mitchelli</u> (Bay Anchovy)	-0-		-0-		-0-		-0-		-0-		-0-		-0-		-0-	

UNIT I (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- BAYOU TECHE -- 8-10 MAY, 1975

	5N		5S		6N		6S		7N		7S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Noturus nocturnus (Freckled Madtom)	-0-		-0-		-0-		-0-		-0-		-0-		5.2	1
Morone saxatilis (Striped Bass)	-0-		-0-		-0-		-0-		-0-		-0-		113.9	2
Dorosoma petenense (Threadfin Shad)	-0-		54.5	3	15.1	1	102.4	1	28.9	2	9.5	1	403.7	12
Dorosoma cepedianum (Gizzard Shad)	-0-		229.4	3	-0-		-0-		241.8	2	-0-		471.2	2
Anchoa mitchelli (Bay Anchovy)	-0-		-0-		-0-		-0-		12.3	10	0.5	1	12.8	11

UNIT I (Cont'd)

CATCH OF FISHES BY 16' TRAWL — BAYOU TECHE — 8-10 May, 1975

SPECIES	STATIONS	(wt. in grams)		(N=Upstream		S=Downstream)										
	1N		1S		2N		2S		3N		3S		4N		4S	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
<u>Micropogan undulatus</u> (Atlantic Croaker)	-0-		-0-		-0-		-0-		-0-		-0-		-0-		-0-	
<u>Paralichthys lethostigma</u> (Southern Flounder)	-0-		-0-		-0-		-0-		-0-		-0-		-0-		-0-	
<u>Brevoortia patronus</u> (Gulf Menhaden)	-0-		-0-		-0-		-0-		-0-		-0-		-0-		-0-	
TOTALS	209.5	5	-0-		365.4	5	220.7	3	98.2	4	1016.6	17	155.2	5	72.2	3

UNIT I (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- BAYOU TECHE -- 8-10 MAY, 1975

	5N		5S		6N		6S		7N		7S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Micropogan undulatus (Atlantic Croaker)	-0-		-0-		7.5	3	20.0	5	2.8	1	6.3	3	36.6	12
Paralichthys lethostigma (Southern Flounder)	-0-		9.2	1	7.7	1	-0-		-0-		-0-		16.9	2
Brevoortia patronus (Gulf Menhaden)	-0-		-0-		-0-		0.6	1	-0-		-0-		0.6	1
TOTALS	67.3	5	1519.0	35	1362.6	57	2379.9	64	3578.3	68	1922.5	64	12967.4	335

UNIT II

CATCH OF FISHES BY 16' TRAWL — VERMILION RIVER — 19-20 April, 1975

SPECIES	STATIONS* (wt. in grams) (N=Upstream S=Downstream) 2N		2S		3N		3S		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Ictalurus punctatus (Channel catfish)	509.4	23	429.2	12	6.6	1	97.4	6	-0-		-0-		-0-		1042.6	42
Ictalurus furcatus (Blue catfish)	-0-		-0-		-0-		-0-		-0-		48.4	4	112.8	8	161.2	12
Aplodinotus grunniens (Fresh water drum)	26.6	4	195.7	3	57.8	3	41.4	1	30.8	1	-0-		-0-		352.3	12
Carassius auratus (Goldfish)	-0-		-0-		0.1	1	-0-		-0-		-0-		-0-		0.1	1
Trinectes maculatus (Hogchoker)	-0-		-0-		-0-		-0-		12.3	2	353.8	52	51.3	9	417.4	63

CATCH OF FISHES BY 16' TRAWL — VERMILION RIVER — 19-20 April, 1975

SPECIES	STATIONS* (wt. in grams) (N=Upstream S=Downstream)															
	2N		2S		3N		3S		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Micropogon undulatus (Atlantic Croaker)	-0-		-0-		-0-		-0-		0.7	1	812.0	6	470.4	28	1283.1	92
Arius felis (Sea Catfish)	-0-		-0-		-0-		-0-		-0-		-0-		121.4	1	121.4	1
Dorosoma petenense (Threadfin Shad)	-0-		-0-		-0-		-0-		-0-		3.5	1	-0-		3.5	1
TOTALS	536.0	27	624.9	15	64.5	5	138.8	7	43.8	4	1217.7	120	755.9	46	3381.6	224

*Trawling impossible due to obstructions on bottom at 1N, 1S, and 4N.

UNIT III

CATCH OF FISHES BY 16' TRAWL — FRESHWATER BAYOU — 5 April, 1975

SPECIES	STATIONS 1N Wt.	1N No.	(wt. in grams) 1S Wt.	1S No.	(N=Upstream 2N Wt.	2N No.	S=Downstream) 2S Wt.	2S No.	3N Wt.	3N No.	3S Wt.	3S No.
Micropogon undulatus (Atlantic Croaker)	391.0	141	28.5	42	210.2	68	168.6	143	7.0	22	188.3	234
Anchoa mitchelli (Bay Anchovy)	5.0	42	0.9	6	6.6	48	57.1	234	0.5	3	8.8	41
Ictalurus furcatus (Blue catfish)	26.7	2	93.6	5	690.8	42	325.0	22	56.1	2	62.3	2
Brevoortia patronus (Gulf Menhaden)	11.3	44	0.9	9	1.3	10	12.8	37	-0-		2.1	5
Arius felis (Sea Catfish)	3.8	1	-0-		14.2	2	-0-		4.7	1	4.3	1
Trinectes maculatus (Hogchoker)	-0-		-0-		26.1	17	37.8	4	-0-		5.7	1

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- FRESHWATER BAYOU -- 5 APRIL, 1975

	4N		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Micropogon undulatus (Atlantic Croaker)	950.0	1470	492.0	1073	823.0	1250	325.7	106	3584.3	4549
Anchoa mitchelli (Bay Anchovy)	4.6	6	1.0	6	95.3	273	43.5	33	223.3	692
Ictalurus furcatus (Blue catfish)	-0-		22.0	1	-0-		-0-		1276.5	76
Brevoortia patronus (Gulf Menhaden)	7.8	3	-0-		18.2	3	9.9	6	64.3	117
Arius felis (Sea Catfish)	61.4	17	149.8	39	16.0	7	60.2	16	314.4	84
Trinectes maculatus (Hogchoker)	-0-		9.2	1	-0-		16.7	1	95.5	24

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL — FRESHWATER BAYOU — 5 April, 1975

SPECIES	STATIONS 1N		(wt. in grams) 1S		(N=Upstream 2N		S=Downstream) 2S		3N		3S	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Gobionellus boleosoma (Darter Goby)	-0-		0.6	1	-0-		0.5	1	-0-		-0-	
Gobionellus schufeldti (Freshwater Goby)	3.3	1	-0-		-0-		-0-		-0-		-0-	
Gobionellus hastatus (Sharptail Goby)	-0-		-0-		-0-		-0-		-0-		-0-	
Poecilia latipinna (Sailfin Molly)	-0-		-0-		-0-		-0-		0.7	1	0.5	1
Membras martinica (Rough Silverside)	1.8	1	-0-		-0-		-0-		-0-		-0-	
Bairdiella chrysura (Silver perch)	3.8	1	-0-		-0-		3.3	1	-0-		-0-	

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- FRESHWATER BAYOU -- 5 April, 1975

	4N		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Gobionellus boleosoma (Darter Goby)	-0-		-0-		-0-		-0-		1.1	2
Gobionellus schufeldti (Freshwater Goby)	13.0	3	-0-		-0-		-0-		16.3	4
Gobionellus hastatus (Sharptail Goby)	-0-		-0-		-0-		9.1	1	9.1	1
Poecilia latipinna (Sailfin Molly)	-0-		0.5	1	-0-		-0-		1.7	3
Membras martinica (Rough Silverside)	-0-		-0-		-0-		-0-		1.8	1
Bairdiella chrysura (Silver perch)	-0-		-0-		-0-		-0-		7.1	2

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL — FRESHWATER BAYOU — 5 April, 1975

SPECIES	STATIONS 1N		(wt. in grams) 1S		(N=Upstream 2N		S=Downstream) 2S		3N		3S	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Citharichthys spilopterus (Bay Whiff)	-0-		-0-		-0-		1.5	1	-0-		-0-	
Leiostomus xanthurus (Spot)	-0-		-0-		-0-		-0-		-0-		-0-	
Symphurus plagiusa (Blackcheek Tonguefish)	-0-		-0-		-0-		-0-		-0-		-0-	
Peprilus burti (Gulf Butterfish)	-0-		-0-		-0-		-0-		-0-		-0-	
Cynoscion arenarius (Sand Seatrout)	-0-		-0-		-0-		-0-		-0-		-0-	
Porichthys porossissimus (Atlantic Midshipman)	-0-		-0-		-0-		-0-		-0-		-0-	

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- FRESHWATER BAYOU -- 5 April, 1975

	4N		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Citharichthys spilopterus (Bay Whiff)	-0-		-0-		-0-		-0-		1.5	1
Leiostomus xanthurus (Spot)	10.0	2	-0-		14.5	2	-0-		24.5	4
Symphurus plagiusa (Blackcheek Tonguefish)	1.0	1	-0-		-0-		-0-		1.0	1
Peprilus burti (Gulf Butterfish)	-0-		-0-		52.2	7	21.1	5	73.3	12
Cynoscion arenarius (Sand Seatrout)	-0-		-0-		1.3	1	6.8	3	8.1	4
Porichthys porosissimus (Atlantic Midshipman)	-0-		20.8	1	-0-		2.9	1	23.7	2

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL — FRESHWATER BAYOU — 5 April, 1975

SPECIES	STATIONS 1N (wt. in grams)		1S		2N (N=Upstream S=Downstream)		2S		3N		3S	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Stellifer lanceolatus (Star Drum)	-0-		-0-		-0-		-0-		-0-		-0-	
Myrophis punctatus (Speckled Worm eel)	-0-		-0-		-0-		-0-		-0-		-0-	
Bagre marinus (Gafftopsoil Catfish)	-0-		-0-		-0-		-0-		-0-		-0-	
Trichiurus lepturus (Atlantic Cutlass fish)	-0-		-0-		-0-		-0-		-0-		-0-	
Sphoeroides parvus (Least Puffer)	-0-		-0-		-0-		-0-		-0-		-0-	
TOTALS	446.7	233	124.5	63	949.2	187	606.6	443	69.0	29	272.0	285

UNIT III (Cont'd)

CATCH OF FISHES BY 16' TRAWL -- FRESHWATER BAYOU -- 5 April, 1975

	4N		4S		5N		5S		Total	
	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.
Stellifer lanceolatus (Star Drum)	-0-		-0-		8.5	1	-0-		8.5	1
Myrophis punctatus (Speckled Worm eel)	-0-		0.1	1	-0-		-0-		0.1	1
Bagre marinus (Gafftopsoil Catfish)	-0-		-0-		-0-		-0-		-0-	
Trichiurus lepturus (Atlantic Cutlass fish)	-0-		-0-		-0-		8.6	1	8.6	1
Sphoeroides parvus (Least Puffer)	-0-		-0-		-0-		5.4	1	5.4	1
TOTALS	1047.8	1502	695.4	1123	1029.0	1544	509.9	174	5750.1	5583

UNIT IV

SIZE FREQUENCIES (BY PERCENT) OF FISHES (10 SPECIMENS OR MORE)
BY TRAWL IN BAYOU TECHE (8-10 May, 1975)

SPECIES	0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159	160-179	180-199	200-219	220-239
Ictalurus punctatus * (Channel catfish)	-0-	-0-	7	10	12	23	19	16	8	3	1	1
Ictalurus furcatus (Blue catfish)	-0-	-0-	-0-	10	22	18	14	14	12	4	2	5
Trinectes maculatus (Hogchoker)	-0-	4	91	4	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Aplodinotus grunniens (Fresh water drum)	-0-	-0-	-0-	42	17	33	9	-0-	-0-	-0-	-0-	-0-
Dorosoma petenense (Threadfin shad)	-0-	-0-	-0-	-0-	18	27	-0-	27	18	-0-	-0-	10

UNIT IV (Cont'd)

SIZE FREQUENCIES (BY PERCENT) OF FISHES (10 SPECIMENS OR MORE)
BY TRAWL IN BAYOU TECHE (8-10 May, 1975)

SPECIES	0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159	160-179	180-199	200-219	220-239
Anchoa mitchelli (Bay anchovy)	-0-	10	90	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Micropogon undulatus (Atlantic Croaker)	-0-	-0-	92	8	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

* + 1 @ 287

UNIT V

SIZE FREQUENCIES (BY PERCENT) OF FISHES (10 SPECIMENS OR MORE)
BY TRAWL IN VERMILION RIVER (19-20 April, 1975)

SPECIES	0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159	160-179
Ictalurus * punctatus (Channel catfish)	-0-	4	38	25	14	6	6	2	2
Ictalurus furcatus (Blue catfish)	-0-	-0-	-0-	17	67	17	-0-	-0-	-0-
Aplodinotus grunniens (Fresh water drum)	-0-	-0-	-0-	-0-	38	50	-0-	12	-0-
Trinectes maculatus (Hogchoker)	-0-	7	58	35	-0-	-0-	-0-	-0-	-0-
Micropogon undulatus (Atlantic Croaker)	-0-	18	22	29	16	3	8	4	<1

* + 1 @ 189 and 1 @ 218

UNIT VI

SIZE FREQUENCIES (BY PERCENT) OF FISHES (10 SPECIMENS OR MORE) BY TRAWL IN FRESHWATER BAYOU (5 April, 1975)

SPECIES	0-19	20-39	40-59	60-79	80-99	100-119	120-139	140-159	160-179
Micropogon undulatus (Atlantic Croaker)	16	61	16	4	1	<1	<1	<1	-0-
Anchoa mitchelli (Bay Anchovy)	12	81	7	-0-	-0-	-0-	-0-	-0-	-0-
Ictalurus furcatus (Blue Catfish)	-0-	-0-	-0-	6	54	24	14	-0-	1
Brevoortia patronus (Gulf Menhaden)	20	73	6	<1	-0-	-0-	-0-	-0-	-0-
Arius felis (Sea Catfish)	-0-	-0-	48	49	<1	<1	-0-	-0-	-0-
Trinectes maculatus (Hogchoker)	-0-	29	42	29	-0-	-0-	-0-	-0-	-0-
Peprilus burti (Gulf Butterfish)		<1	8	1	<1	-0-	-0-	-0-	-0-

UNIT VII

CATCH OF ZOOPLANKTON IN BAYOU TECHE

Name	0 +	0 −	1 +	1 −	2 +	2 −	3 +	3 −	4 +	4 −	5 +	5 −	6 +	6 −	7 +	7 −
Copepoda	U	U	U	U	C	U	A	A	C	C	A	A	C	C	U	
Rotifera	U	U	U	U	R		U	U	U	U			C	U		
Nauplii	U	U	U	U				U								
Fish (Unident.)												R			R	R
<u>Brevoortia patronus</u> (post larva)													R			
<u>Anchoa mitchelli</u> (post larva)													R			
Cladocera			U	U	R	A	A	U	C	A	A	C	C	U		
Chironomidae		U	C	C	C	U	C	U	C	C	R	R		U	C*	U
Culicidae				R	R	R			U	U				R		
<u>Chaborous</u>			U				R	R		U		R		U		
Ephemeridae								R	R	R	R		C	U		

UNIT VIII (Cont'd)

CATCH OF ZOOPLANKTON IN THE VERMILION RIVER

	1		2		3		4		5	
Name	+	-	+	-	+	-	+	-	+	-
Ephemeridae									R	
Ceratopogonidae	R									
Mysid larva										
Acarina						R		R		
Tubificidae					U	U	C	U	U	

(A = Abundant; C = Common; U = Uncommon; R = Rare; + = Upstream Station; - = Downstream Station)

UNIT VII (Cont'd)

CATCH OF ZOOPLANKTON IN BAYOU TECHE

	0		1		2		3		4		5		6		7	
Name	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Trichoptera	R															
Notonectidae										R						
Acarina								R		R			U	U		
Amphipoda					C			R					R			
Tubificidae										U						
Nematoda		R														
Hydromedusa													C	C		

(A = Abundant; C = Common; U = Uncommon; R = Rare; + = Upstream Station; - = Downstream Station)

UNIT X

CATCHES OF INVERTEBRATES BY DREDGE AND TRAWL

SPECIES	STATIONS FRESHWATER BAYOU					(A=Abundant C=Common U=Uncommon R=Rare) VERMILION RIVER					BAYOU TECHE							
	1	2	3	4	5	1	2	3	4	5	0	1	2	3	4	5	6	7
Corbula manilensis (Asiatic Clam)						U					A	A	R					
Sphaeridae (Pea clam)							R	U	U									
Quadrula apiculata (Freshwater Mussel)														U				
Elliptio crassidens (Freshwater Mussel)															R			
Rangia cuneata (Road Clam)		R								R								
Procambarus clarki (Red Swamp Crayfish)							R					R	R		R			

UNIT X (Cont'd)

CATCHES OF INVERTEBRATES BY DREDGE AND TRAWL

STATIONS (A=Abundant C=Common U=Uncommon R=Rare)

SPECIES	FRESHWATER BAYOU 1	2	3	4	5	VERMILION RIVER 1	2	3	4	5	BAYOU TECHE 0	1	2	3	4	5	6	7
Procambrus blandingi (White Crayfish)												U	R					
Orconectes lancifer (Crayfish)						R												
Macrobrachium ohione (River Shrimp)														U		U	U	U
Palaemonetes pugio (Grass Shrimp)	R																	
Penaeus setiferus (White shrimp)	U	U	U	U	U				R	U								
Callinectes sapidus (Blue Crab)		R	U	R	R					R				R		R	R	

UNIT X (Cont'd)

CATCHES OF INVERTEBRATES BY DREDGE AND TRAWL

STATIONS (A=Abundant C=Common U=Uncommon R=Rare)

SPECIES	FRESHWATER BAYOU 1	2	3	4	5	VERMILION RIVER 1	2	3	4	5	BAYOU TECHE 0	1	2	3	4	5	6	7
Rithropanopeus harrisi (Mud Crab)	R									R								
Chironomidae (Midge)																	R	
Scarabaeidae (Scarab Beetle Larva)				R														
Gomphidae (Dragonfly Naiad)												R						
Elmidae (Riffle Beetle Larva)												R						
Gammaridae (Amphipod unident.)												R						

UNIT X (Cont'd)

CATCHES OF INVERTEBRATES BY DREDGE AND TRAWL

STATIONS (A=Abundant C=Common U=Uncommon R=Rare)

SPECIES	FRESHWATER BAYOU					VERMILION RIVER					BAYOU TECHE							
	1	2	3	4	5	1	2	3	4	5	0	1	2	3	4	5	6	7
Oligochaeta (unident.)												R						
Tubificidae (Bloodworms unident.)	C	U	U			U	C	U	U		R	U	R		U	U	R	U
Neanthes sp. (Clam Worm)				R														
Hirudinea (Leech unident.)														R				
<u>Paranthus</u> (Sea Onions unident.)				U														

APPENDIX D

TABLE 1

WATER QUALITY PARAMETERS OF VERMILION RIVER AT PERRY, LA.

(PERIOD OCT. 1971 TO SEPT. 1972)

Parameter	Mean	Max.	Min.
Silica (SiO_2) (mg/l)	8.4	17	4.3
Iron (mg/l)	87.8	220	20
Calcium (mg/l)	19.6	67	5.6
Magnesium (mg/l)	6.0	17	1.5
Diss. Sodium (mg/l)	62.9	340	5.3
Diss. Potassium (mg/l)	5.4	15	2.6
Bicarbonate HCO_3 (mg/l)	63.9	104	25
Diss. Sulfate (mg/l)	17.5	76	3.8
Diss. Chloride (mg/l)	101.1	600	5.6
Fluoride (mg/l)	.21	.30	.10
Nitrate (mg/l)	.37	.60	.10
Diss. Solids (mg/l)	272	1200	82
Hardness Ca, Mg (mg/l)	254.3	240	20
Non-carbonate Hardness (mg/l)	21.4	180	0
Conductance (micromhos)	471.2	2200	71
Temperature (° C.)	22.6	29.0	10.5
Color (platinum-cobalt units)	40.6	60	20
pH	6.9	7.4	6.5

Source: Domingue, Szabo & Assoc., 1974.

TABLE 2

WATER QUALITY (1974)

Wax Lake Outlet At Calumet
Station No. 03720
Depth sampled = 0.61 meter (2 feet)

MONTH	TEMP. (°C)	CONDUCTIVITY (MICROMHOS / CM)	DO (mg/1)	pH
Feb	Max 11.7	Max 0.20	Max 8.9	Max 6.3
	Min 10.2	Min 0.20	Min 7.7	Min 5.7
	Mean 11.1	Mean 0.20	Mean 8.1	Mean 6.0
Mar	Max 17.3	Max 0.30	Max 9.3	Max 7.4
	Min 14.1	Min 0.20	Min 7.5	Min 7.0
	Mean 15.4	Mean 0.25	Mean 8.4	Mean 7.2
Apr	Max 19.6	Max 0.30	Max 9.2	Max 7.2
	Min 16.1	Min 0.20	Min 6.8	Min 6.5
	Mean 17.4	Mean 0.24	Mean 7.8	Mean 6.9
May	Max 22.8	Max 0.40	Max 6.0	Max 6.8
	Min 22.8	Min 0.40	Min 6.0	Min 6.8
	Mean 22.8	Mean 0.40	Mean 6.0	Mean 6.8
June	Max 25.8	Max 0.40	Max 6.2	Max 7.9
	Min 25.0	Min 0.30	Min 5.4	Min 7.7
	Mean 25.3	Mean 0.33	Mean 5.6	Mean 7.8
July	Max 29.4	Max 0.20	Max 6.5	Max 8.2
	Min 26.4	Min 0.04	Min 6.2	Min 8.1
	Mean 27.9	Mean 0.12	Mean 6.4	Mean 8.15
Aug	Max 29.2	Max 0.30	Max 7.5	Max 8.1
	Min 26.6	Min 0.50	Min 7.0	Min 8.0
	Mean 27.7	Mean 0.40	Mean 7.3	Mean 8.1
Sept	Max 25.0	Max 0.50	Max 7.2	Max 8.5
	Min 23.4	Min 0.40	Min 7.2	Min 6.9
	Mean 24.2	Mean 0.45	Mean 7.2	Mean 7.7
Oct	Max 19.9	Max 0.30	Max 6.6	Max 8.1
	Min 17.4	Min 0.30	Min 6.6	Min 6.8
	Mean 18.9	Mean 0.30	Mean 6.6	Mean 7.4
Nov	Max 13.9	Max 0.30	Max 9.8	Max 7.4
	Min 10.6	Min 0.10	Min 7.9	Min 7.3
	Mean 12.3	Mean 0.20	Mean 8.9	Mean 7.35
Dec	Max 6.7	Max 0.20	Max 10.1	Max 7.5
	Min 6.7	Min 0.20	Min 10.1	Min 7.5
	Mean 6.7	Mean 0.20	Mean 10.1	Mean 7.5

TABLE 3

WATER QUALITY (1974)

Freshwater Canal Above Freshwater Bayou Lock
Station No. 76591
Depth sampled = 3.05 meters (10 feet)

MONTH	TEMP. (°C)	CHLORIDE (Cl,1000 ppm)
Jan	Max 19.4	Max 9.100
	Min 10.0	Min 0.607
	Mean 16.4	Mean 3.767
Feb	Max 20.0	Max 8.493
	Min 10.6	Min 0.121
	Mean 15.3	Mean 2.080
Mar	Max 23.3	Max 4.732
	Min 14.4	Min 1.820
	Mean 19.7	Mean 3.677
Apr	Max 23.9	Max 8.493
	Min 16.1	Min 2.063
	Mean 20.5	Mean 3.959
May	Max 27.2	Max 6.340
	Min 21.7	Min 1.140
	Mean 25.4	Mean 2.568
June	Max 28.9	Max 12.252
	Min 23.9	Min 1.360
	Mean 26.3	Mean 4.688
July	Max 31.1	Max 11.000
	Min 26.7	Min 3.895
	Mean 28.9	Mean 6.619
Aug	Max 30.6	Max 13.000
	Min 28.3	Min 3.600
	Mean 25.3	Mean 4.987
Sept	Max 29.4	Max 11.000
	Min 20.0	Min 2.400
	Mean 23.5	Mean 4.877
Oct	Max 23.9	Max 12.400
	Min 20.0	Min 4.900
Nov	Max 23.9	Max 14.000
	Min 14.4	Min 4.000
	Mean 18.5	Mean 7.353
Dec	Max 18.9	Max 12.000
	Min 2.0	Min 4.000
	Mean 13.9	Mean 6.961

TABLE 4

BAYOU TECHE DISCHARGE AND GAGE READINGS *

Location	Mean[1]	Max[1]	Min[1]	Ac-Ft	Stream Velocity Mean[2]	Mean Gage Reading (ft)
Arnaudville, 1965-1972	707	1,610	158	523,000		10.70
Ruth Canal, 1971-72	70.8	311	19	51,410		9.58
Port Barre, 1973	1,133	1,358	814	-	1.31	20.03
New Iberia, 1973	1,279	2,640	326	-	1.22	3.31

[1] Cubic feet per second

[2] Feet per second

* "Load Allocations in Water Quality Limited Segments of the Mermentau-Vermilion-Teche Basin," Domingue, Szabo, and Assoc., Inc., March, 1974.

TABLE 5

VERMILION RIVER DISCHARGE AND GAGE READINGS *

Location	Mean[1]	Max[1]	Min[1]	Stream Velocity Mean[2]	Mean Gage Reading (ft)
Long Bridge, 1973	2,680	3,320	2,040	1.50	11.75
Tonton's Bridge, 1973	1,048	2,510	116	1.20	9.86
Abbeville, 1973	4,730	4,730	4,730	1.81	6.70
Broussard Bridge, 1973	3,125	3,620	2,630	1.55	6.48

[1]Cubic feet per second

[2]Feet per second

* "Load Allocations in Water Quality Limited Segments of the Mermentau-Vermilion-Teche Basin," Domingue, Szabo, and Assoc.,Inc., March, 1974.

TABLE 6

WATER QUALITY ANALYSIS (mg/l)

Vermilion River Station No. 1
May, 1975 -- Vermilion River at Bayou Fusilier

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	57.3	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	78.7	<.1	240	152	1475	0.81	<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	30.4	7.4		81	92		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	41.8	1.9					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.7	>19					+	+	>1.0	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

++ Proposed EPA maximum acceptable concentrations of heavy metals in estuaries,"Proposed Criteria for Water Quality," Vol.1, Oct. 1973. U.S.E.P.A., Washington, D.C., 20460.

TABLE 7

WATER QUALITY ANALYSIS (mg/1)

Vermilion River Station No. 2
May, 1975 -- **North of Pinhook Bridge, Lafayette, La.**

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	97	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	146	.2	279	102	2308	0.86	<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	19	5.8		76	104		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	30.5	6.2					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.3	>62					+	+	>1.0	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

++ Proposed EPA maximum acceptable concentrations of heavy metals in estuaries,"Proposed Criteria for Water Quality," Vol.1, Oct. 1973. U.S.E.P.A., Washington, D.C., 20460.

TABLE 8

WATER QUALITY ANALYSIS (mg/l)

Vermilion River Station No. 3
May, 1975 -- Woodlawn Bridge

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	42	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	142	<.1	345	110	1248	1.39	<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	223	6.5	72	170			<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	26.7	1.3					<.001	.04	.05	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.6	>13					+	>4	>2.5	+	+	+	+	+
Concentration Acceptability	Yes	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 9

WATER QUALITY ANALYSIS (mg/l)

Vermilion River Station No. 4
May, 1975 -- **Perry Bridge**

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	50	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	146	<.1	274	78	690	1.22	<.001	<.01	<.01	.01	<.01	<.01	<.01	<.01
Sediment	15.2	3.9		84	56		<.001	<.01	<.01	<.01	<.01	<.01	3.2	2.0
Standard Elutriate (Dissolved)	15.2	1.0					<.001	<.01	.05	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.3	>10					+	+	>2.5	+	+	+	+	+
Concentration Acceptability	Yes	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity** = 200; DO* = 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 10

WATER QUALITY ANALYSIS (mg/1)

Bayou Teche Station No. 0
May, 1975 -- Leonville, La.

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	47.2	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	63	.2	281	210	1288	0.50	<.001	<.01	<.01	<.01	<.01	<1.0	<.01	<.01
Sediment	47.2	1.2		103	77		0.2	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	72.2	<.1					<.001	<.01	.06	<.01	<.01	.08	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	1.5	+					+	+	>3	+	+	>1.3	+	+
Concentration Acceptability	Yes	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

++ Proposed EPA maximum acceptable concentrations of heavy metals in estuaries,"Proposed Criteria for Water Quality," Vol.1, Oct. 1973. U.S.E.P.A., Washington, D.C., 20460.

TABLE 11

WATER QUALITY ANALYSIS (mg/l)

Bayou Teche May, 1975 -- Station No. 1 Arnaudville, La.

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	43.4	<.1					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	47.2	<.1	151	118	1140	0.70	<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	102.7	6.5		58	54		<.001	<.01	<.01	<.01	0.2	<.01	<.01	<.01
Standard Elutriate (Dissolved)	61.1	1.0					<.001	<.01	.09	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	1.4	>10					+	+	4.5	+	+	+	+	+
Concentration Acceptability	Yes	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 12

WATER QUALITY ANALYSIS (mg/1)

Bayou Teche — Station No. 2
May, 1975 -- Bayou Teche at Ruth Canal

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	31.7	<.1					<.001	<.01	.06	<.01	<.01	.10	<.1	<.1
Surface Water[1] Quality (Total)	59.5	.2	145	98	368	0.77	<.001	.1	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	22.8	4.8		50	41		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	34.3	4.5					<.001	.05	.07	<.01	<.01	.10	<.1	.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	1.08	>45					+	>5	1.2	+	+	1.0	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 13

WATER QUALITY ANALYSIS (mg/l)

Bayou Teche — Station No. 3
May, 1975 -- Keystone Locks and Dam

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	11.9	<.1					<.001	<.01	.05	<.01	<.01	.10	<.1	<.1
Surface Water[1] Quality (Total)	59.5	<.1	157	109	208	0.79	<.001	.1	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	165.3	<.1	+	20	47		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	38.2	4.7					<.001	.01	.05	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	3.2	>47					+	>1	1.0	+	+	<.6	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 14

WATER QUALITY ANALYSIS (mg/l)

Bayou Teche Station No. 4
May, 1975 -- Between New Iberia and Jeanerette, La.

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	11.7	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	15.5	.6	259	170	1095	1.35	<.001	.13	<.01	<.01	<.01	<.01	<.01	<.01
Sediment	39.4	6.1		44	24		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	34.3	1.5					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	2.9	>15					+	+	+	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 15

WATER QUALITY ANALYSIS (mg/l)

Bayou Teche May, 1975 -- Station No. 5 At Charenton Canal

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	19.8	<.1					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	43.3	.6	523	304	735	0.72	<.001	<.01	.01	<.01	<.01	<.01	<.01	<.01
Sediment	70.9	8.1		61	48		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	22.9	4.2					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	1.2	>42					+	+	+	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 16

WATER QUALITY ANALYSIS (mg/l)

Bayou Teche May, 1975 -- Station No. 6 At Hanson Canal

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	15.8	.1					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	35.6	.1	241	98	689	0.84	<.001	<.01	0.4	<.01	<.01	<.01	<.01	<.01
Sediment	23.6	6.3		49	77		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	31.5	15.8					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	2.0	158					+	+	<1.0	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

1 Collected at 1.5 meters below the surface of the stream.

2 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

3 Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 17

WATER QUALITY ANALYSIS (mg/1)

Bayou Teche — Station No. 7
May, 1975 -- At Calumet Floodgate

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	15.8	<.1					<.001	<.01	.05	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	102.3	<.1	185	87	1393	0.56	<.001	<.01	<.01	<.01	<.01	.01	<.01	<.01
Sediment	163.3	<.1		22	59		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	31.9	5.3					<.001	<.01	<.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	2.0	>53					+	+	<.4	+	+	+	+	+
Concentration Acceptability	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 18

WATER QUALITY ANALYSIS (mg/l)

Freshwater Canal — Station 1
May, 1975 -- GIWW at Schooner Bayou Cut-Off

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	35.6	<.1					<.001	<.01	.05	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	63.4	.5	2593	435	688	0.67	<.001	<.01	.05	<.01	<.01	<.01	<.01	<.01
Sediment	115.5	1.7		96	91		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	34.3	1.3					<.001	<.01	.05	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.9	>13					+	+	1.0	+	+	+	+	+
Concentration Acceptability	Yes	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 19

WATER QUALITY ANALYSIS (mg/1)

Freshwater Canal — Station No. 2
May, 1975 -- At Schooner Bayou

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	67.3	<.1					<.001	<.01	<.02	<.01	<.01	.12	<.1	<.1
Surface Water[1] Quality (Total)	72.4	.5	3348	241	456	0.68	<.001	<.01	.05	<.01	<.01	<.01	<.01	<.01
Sediment	15.2	1.4		116	131		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	49.6	<.1					<.001	<.01	.05	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0.7	+					+	+	>2.5	+	+	>.5	+	+
Concentration Acceptability	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

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TABLE 20

WATER QUALITY ANALYSIS (mg/l)

Freshwater Canal May, 1975 -- Station No. 4 At Freshwater Bayou

Water Quality	COD	TKN	TSS	VSS	O&G	PO_4 (Total)	Hg	Pb	Zn	As	Cd	Cu	Cr	Ni
EPA ++							.001	.05	.1	.05	.01	.05	.1	.1
Surface Water[1] Quality (Dissolved)	70.3	<.1					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Surface Water[1] Quality (Total)	76.0	.5	3983	510	953	1.03	<.001	<.01	.03	<.01	<.01	<.01	<.01	<.01
Sediment	144.6	2.3		81	111		<.001	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Standard Elutriate (Dissolved)	171.7	1.2					<.001	<.01	.02	<.01	<.01	<.05	<.1	<.1
Criteria Factor[2] Established by Elutriate Test	15	15					15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	2.4	>12					+	+	1.0	+	+	+	+	+
Concentration Acceptability	No	+					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Parameters: Temp= 20.3° C.; Conductivity**= 200; DO*= 6.8

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15= Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved)

[3] Actual Criteria Factor= Actual Dissolved Standard Elutriate/Actual Dissolved Water Quality Factor

* ppm; **micromhos/cm; +indeterminant

++ Proposed EPA maximum acceptable concentrations of heavy metals in estuaries,"Proposed Criteria for Water Quality," Vol.1, Oct. 1973. U.S.E.P.A., Washington, D.C., 20460.

OUTLINE OF ELUTRIATE TEST

1.0 Scope and Application

1.1 This test may be used for assessing the contribution of soluble and partly soluble constituents of dredged materials to receiving water.

1.2 This test will measure (a) the dissolved materials in the interstitial waters of the dredged material, (b) the readily soluble fractions of the solid phases of the dredged material, and (c) the constituents loosely absorbed on the solid phases of the dredged material.

1.3 This test will not measure any of the insoluble or tightly absorbed material associated with rapidly settleable dredged material.

2.0 Summary of Test

2.1 A fixed volume of dredged material is added to a fixed volume of composite receiving water (proposed disposal site water) at a ratio of 1:4, dredged material: receiving water. The mixture is shaken for a specific time under controlled conditions. After shaking, the sediment is allowed to settle; the supernatant is decanted, centrifuged, and filtered for clarification. The concentration of specific constituents in the clear supernatant (the standard elutriate) from the dredged material/receiving water mixture is compared to the concentration found in the original filtered receiving water.

3.0 Sample Collection and Preservation

3.1 Collect composite receiving water samples in plastic bottles and immediately store at 4°C.

3.2 Collect dredged material samples in plastic jars or bags (Whirl-Pak, plastic freezer containers, etc.) and store at 4°C or in frozen condition.

3.3 For all trace organic measurements, water and dredged material samples must be collected in glass containers (see item 5.2) and stored at 4°C until analyzed.

3.4 Caveat: The number of samples to be taken of the dredged material for replicate analysis must be carefully considered because of the extremely heterogeneous nature of these sample types. Concurrently, the number of replicate analyses to be made on the composite receiving water must also be carefully considered because of the comparatively low background levels of constituents present in these sample types.

4.0 Definitions

4.1 Receiving water - water collected at the proposed dump site.

4.2 Dredged material - any material excavated or dredged from the navigable waters of the United States.

5.0 Apparatus

5.1 Laboratory shaker, Eberback 6000 with a 6050 Utility Box, or equivalent, capable of shaking a 1 gallon container at 100 excursions/minute.

5.2 Glass jars, wide mouth, one gallon capacity with Teflon liners, screw top lids. Note: It may be necessary to purchase jars and Teflon sheets separately, in which case the Teflon lid liners may be prepared by the laboratory personnel.

6.0 Procedure

6.1 Collect a minimum volume of two gallons of receiving water. If it is known in advance that a large number of measurements are to be performed on the dredged material-receiving water mix sample, a 5 gallon sample may be advisable. Store immediately at 4°C.

6.2 Filter an appropriate portion of the composite receiving water sample through a 0.45 micron membrane filter that has been prerinsed with about 100 ml of the same water.

6.3 Analyze this filtered sample as quickly as possible for the constituents of interest, using "Methods for Chemical Analysis of Water and Wastes." Cf Ref. 8.1.

6.4 Collect about a one gallon sample of dredged material. Immediately store at 4°C or in frozen state until used in the extraction test that follows.

6.5 Mix the dredged material and unfiltered composite receiving water in a volumetric 1:4 ratio of dredged material: receiving water (at room temperature, 22°C $\pm$ 2°). This is best done by the method of volumetric displacement. One hundred ml of unfiltered receiving water is placed into a one-liter graduated cylinder.

Dredged material is carefully added until the mixture reaches a volume of 300 ml (A 200 ml volume of dredged material will now be in the flask). The flask is filled to 1000 ml with unfiltered composite receiving water, giving a final volume ratio of 1:4, dredged material: receiving water.

6.6 Cap tightly and shake vigorously on an automatic shaker at about 100 excursions per minute for 30 minutes.

6.7 After shaking, the suspension is allowed to settle for one hour.

6.8 After settling, the supernatant is carefully decanted, centrifuged and filtered with a 0.45 micron membrane filter to give a clear final solution (the standard elutriate). Store in a clean glass container at 4°C.

6.9 Analyze for constituents of interest, using "Methods for Chemical Analysis of Water and Wastes." Cf Ref. 8.1.

6.10 If it appears that the total volume required for all measurements is greater than one liter, proportionately larger volumes of dredged material and receiving water may be used. Alternatively, several dredged material-receiving water samples may be prepared, following steps 6.5 through 6.8, in which case the standard elutriates should be combined.

7.0 Calculations

7.1 If $SE > 15^{+}W$, pollution criteria are exceeded, where:

SE = Concentration of specific constituent in the standard elutriate.

W = Concentration of same constituent in filtered composite receiving water sample.

+This factor has been changed recently by EPA from 1.5 to 15 for inland streams.

* Obtained from "Methods for Chemical Analysis of Water and Wastes," Environmental Protection Agency, National Environmental Research Center, Analytical Quality Control Laboratory, Cincinnati, Ohio. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock #5501-0067).

TABLE 21

PESTICIDE RESIDUE ANALYSIS (mg/1)

Vermilion River — May, 1975 — Station No. 1 — Vermilion River at Bayou Fusilier

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	.027	.011	.036	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 22

PESTICIDE RESIDUE ANALYSIS (mg/l)

Vermilion River Station No. 2
May, 1975 Vermilion River at Pinhook Bridge

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	.032	.012	.080	.003	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 23

PESTICIDE RESIDUE ANALYSIS (mg/l)

Vermilion River Station No. 3
May, 1975 Vermilion River at Woodlawn Bridge

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	.024	.011	.021	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 24

PESTICIDE RESIDUE ANALYSIS (mg/1)

Vermilion River — Station No. 4
May, 1975 — Vermilion River at Perry Bridge

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	.021	.006	.008	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 25

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche — Station No. 0
May, 1975 — Bayou Teche at Leonville

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.001	ND	ND	ND	ND	ND	ND	ND	.0002	ND	ND	ND
Sediment	ND	ND	.029	ND	.039	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 26

PESTICIDE RESIDUE ANALYSIS (mg/l)

Bayou Teche Station No. 1
May, 1975 Bayou Teche at Arnaudville

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	.00003	ND	ND	ND	ND
Sediment	ND	ND	.022	.004	.022	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 27

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche May, 1975 — Station No. 2 Bayou Teche at Ruth Canal

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.006	ND	ND	ND	ND	ND	ND	.0001	ND	ND	ND	ND
Sediment	ND	ND	.789	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 28

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche May, 1975 — Station No. 3 Bayou Teche at Keystone Locks

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.002	ND	ND	ND	ND	ND	ND	.00004	ND	ND	ND	ND
Sediment	ND	ND	.004	.039	.008	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 29

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche May, 1975 — Station No. 4 Bayou Teche Between New Iberia and Jeanerette

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	.001	ND	ND	ND	ND	ND	ND	.00003	ND	ND	ND	ND
Sediment	ND	ND	ND	ND	ND	.001	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.

ND=none detected

[1] Collected at 1.5 meters below the surface of the stream.

[2] 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).

[3] Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 30

PESTICIDE RESIDUE ANALYSIS (mg/l)

Bayou Teche May, 1975 | Station No. 5 Bayou Teche at Charenton Canal

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	.0002	ND	ND	ND	ND
Sediment	ND	ND	.008	.005	.003	.0007	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
[1] Collected at 1.5 meters below the surface of the stream.
[2] 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
[3] Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 31

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche May, 1975 — Station No. 6 Bayou Teche at Hanson Canal

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.00005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	.003	.003	ND	.0006	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 32

PESTICIDE RESIDUE ANALYSIS (mg/1)

Bayou Teche — May, 1975

Station No. 7 — Bayou Teche at Calumet Floodgate

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	.0002	ND	ND	ND	ND
Sediment	ND	ND	.0005	ND	ND	.0007	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 33

PESTICIDE RESIDUE ANALYSIS (mg/1)

Freshwater Canal   Station No. 1
May, 1975   Freshwater Canal at GIWW

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 34

PESTICIDE RESIDUE ANALYSIS (mg/1)

Freshwater Canal May, 1975 — Station No. 2 Freshwater Canal at Schooner Bayou

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.00005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
1 Collected at 1.5 meters below the surface of the stream.
2 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
3 Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 35

PESTICIDE RESIDUE ANALYSIS (mg/1)

Freshwater Canal May, 1975 — Station No. 4 Freshwater Canal at Freshwater Bayou

PESTICIDE	Aldrin	Chlordane	DDD	DDE	DDT	Dieldrin	Endrin	Ethion	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
MDL	.00005	.0001	.00005	.00005	.00005	.0001	.0001	.01	.00001	.00001	.0005	.00001	.001
Surface Water[1] (dissolved)	ND	ND	ND	ND	ND	ND	.0002	ND	ND	ND	ND	ND	ND
Sediment	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Elutriate (dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Criteria Factor[2] Established by Elutriate Test	15	15	15	15	15	15	15	15	15	15	15	15	15
Actual Criteria Factor[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentration Acceptability	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

MDL=minimum detectable level.
ND=none detected
[1] Collected at 1.5 meters below the surface of the stream.
[2] 15=Dredge Discharge Supernatant (Dissolved)/Surface Water Quality (Dissolved).
[3] Actual Criteria Factor=Actual Dissolved Standard Elutriate/Actual Dissolved Water parameter.

TABLE 36

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (8-10 May, 1975)

BAYOU TECHE (STATIONS 0-7) Depths (m)	0	1	2	3	4	5	6	7
	STATION 0							
Salinity (0/00)	0.0	0.0	0.0	-0-	-0-	-0-	-0-	-0-
Cond. (μmhos)	91.0	93.0	92.0	-0-	-0-	-0-	-0-	-0-
Temp. (°C)	23.5	22.9	22.9	-0-	-0-	-0-	-0-	-0-
	23.9	23.9	23.9	23.9	-0-	-0-	-0-	-0-
Oxygen (ppm)	3.0	3.1	3.2	23.3	-0-	-0-	-0-	-0-
pH	7.4	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	STATION 1							
Cond.	8.5	7.8	7.8	-0-	-0-	-0-	-0-	-0-
Temp.	22.0	22.5	22.2	-0-	-0-	-0-	-0-	-0-
Oxygen	4.05	4.2	4.4	-0-	-0-	-0-	-0-	-0-
pH	5.95	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	STATION 2							
Cond.	8.3	8.5	-0-	-0-	-0-	-0-	-0-	-0-
Temp.	22.7	22.7	-0-	-0-	-0-	-0-	-0-	-0-
Oxygen	3.77	3.95	3.95	-0-	-0-	-0-	-0-	-0-
pH	6.1	-0-	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 36(cont.)

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (8-10 May, 1975)

BAYOU TECHE (STATIONS 0-7) Depths (m)	0	1	2	3	4	5	6	7
STATION 3								
Cond. (μmhos)	92.0	95.0	95.0	-0-	-0-	-0-	-0-	-0-
Temp. (°C)	22.5	22.5	22.5	-0-	-0-	-0-	-0-	-0-
Oxygen (ppm)	5.5	6.0	5.9	5.3	-0-	-0-	-0-	-0-
pH	7.1	-0-	-0-	-0-	-0-	-0-	-0-	-0-
STATION 4								
Cond.	125.0	128.0	128.0	-0-	-0-	-0-	-0-	-0-
Temp.	25.0	24.0	24.0	-0-	-0-	-0-	-0-	-0-
Oxygen	2.8	2.75	2.7	2.7	-0-	-0-	-0-	-0-
pH	6.9	-0-	-0-	6.9	-0-	-0-	-0-	-0-
STATION 5								
Cond.	135.0	138.0	138.0	-0-	-0-	-0-	-0-	-0-
Temp.	24.5	24.5	24.5	-0-	-0-	-0-	-0-	-0-
Oxygen	5.7	5.8	5.4	4.0	-0-	-0-	-0-	-0-
pH	7.4	7.4	7.4	7.4	-0-	-0-	-0-	-0-

TABLE 36 (cont.)

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (8-10 May, 1975)

BAYOU TECHE (STATIONS 0-7) Depths (m)	0	1	2	3	4	5	6	7
	STATION 6							
Cond. (μmhos)	255.0	255.0	250.0	-0-	-0-	-0-	-0-	-0-
Temp. (°C)	24.0	24.0	24.0	24.0	-0-	-0-	-0-	-0-
Oxygen	4.0	3.85	2.3	2.4	-0-	-0-	-0-	-0-
pH	6.95	-0-	6.85	-0-	-0-	-0-	-0-	-0-
	STATION 7							
Cond.	275.0	275.0	270.0	-0-	-0-	-0-	-0-	-0-
Temp.	25.0	25.0	24.0	-0-	-0-	-0-	-0-	-0-
Oxygen	4.2	4.2	3.8	-0-	-0-	-0-	-0-	-0-
pH	7.5	-0-	7.55	-0-	-0-	-0-	-0-	-0-
Salinity (0/00)	0.2	0.3	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 37

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (19-20 April, 1975)

VERMILION RIVER (STATIONS 1-5) Depths (m)	0	1	2	3	4	5
STATION 1						
Salinity (0/00)	0.1	0.1	0.1	-0-	-0-	-0-
Cond. (μmhos)	20.0	20.0	20.0	-0-	-0-	-0-
Temp. (°C)	20.3	20.3	20.3	-0-	-0-	-0-
Oxygen (ppm)	5.8	5.4	5.7	-0-	-0-	-0-
pH	6.55	-0-	-0-	-0-	-0-	-0-
STATION 2						
Salinity	0.0	0.0	0.0	0.0	-0-	-0-
Cond.	2.0	2.0	2.0	2.0	-0-	-0-
Temp.	20.2	20.0	20.0	19.9	-0-	-0-
Oxygen	5.5	4.9	4.8	5.0	-0-	-0-
pH	-0-	6.5	-0-	-0-	-0-	-0-

TABLE 37 (Cont'd)

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH
BIOLOGICAL SAMPLING (19-20 April, 1975)

VERMILION RIVER (STATIONS 1-5) Depths (m)	0	1	2	3	4	5
STATION 3						
Salinity (0/00)	0.1	0.1	0.1	0.2	0.1	-0-
Cond. (μmhos)	2.0	2.0	2.0	2.0	2.0	-0-
Temp. (°C)	21.0	21.0	21.0	21.3	21.4	-0-
Oxygen (ppm)	4.5	4.3	4.3	4.4	4.5	-0-
pH	-0-	6.55	-0-	-0-	-0-	-0-
STATION 5						
Salinity	0.4	0.3	0.5	0.5	0.6	0.6
Cond.	6.0	6.0	7.0	9.0	10.0	10.0
Temp.	20.5	20.6	20.7	20.8	20.9	20.8
Oxygen	4.6	4.6	4.6	4.8	4.8	-0-

TABLE 38

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (5 April, 1975)

FRESHWATER BAYOU (STATIONS 1-5) Depths (m)	0	1	2	3	4	5
STATION 1						
Salinity (0/00)	2.2	2.2	2.2	2.2	2.2	-0-
Temp. (°C)	-0-	15.6	15.6	15.6	15.6	-0-
Oxygen (ppm)	7.0	7.6	7.0	8.0	7.8	-0-
pH	7.73	7.55	-0-	-0-	7.60	-0-
STATION 2						
Salinity	2.2	2.2	2.2	2.2	2.2	-0-
Temp.	16.1	15.9	15.8	15.8	15.8	-0-
Oxygen	6.4	7.9	8.7	8.8	7.8	9.2
pH	7.6	7.57	-0-	-0-	-0-	7.62
STATION 3						
Salinity	2.8	2.8	2.8	2.8	2.8	-0-
Temp.	16.0	16.0	15.8	15.6	15.6	-0-
Oxygen	7.3	7.9	7.9	8.0	8.1	-0-
pH	7.65	7.62	-0-	-0-	7.65	-0-

TABLE 38 (Cont'd)

HYDROGRAPHIC DATA TAKEN CONCURRENT WITH BIOLOGICAL SAMPLING (5 April, 1975)

FRESHWATER BAYOU (STATIONS 1-5) Depths (m)	0	1	2	3	4	5
STATION 4						
Salinity (0/00)	3.9	4.1	4.2	4.4	4.5	-0-
Temp. (°C)	16.6	16.6	16.4	16.4	16.4	-0-
Oxygen (ppm)	7.2	7.3	7.1	6.0	6.0	-0-
pH	7.75	7.75	-0-	-0-	-0-	-0-
STATION 5						
Salinity	7.3	7.4	8.1	10.4	14.3	8.8
Temp.	17.0	16.8	16.4	16.4	16.4	17.2
Oxygen	8.9	8.3	8.7	9.0	-0-	1.5
pH	8.1	8.0	-0-	-0-	-0-	-0-

APPENDIX E

5 SEPTEMBER 1975 EPA INTERIM FINAL GUIDELINES FOR DISCHARGE OF DREDGED OR FILL MATERIAL IN NAVIGABLE WATERS

On 26 June 1973 the Environmental Protection Agency, (EPA), Region VI, issued proposed regional bottom sediment criteria to be used in evaluating the suitability of disposal of dredged or fill materials. On 15 October 1973 the EPA published in the Federal Register "Environmental Protection Agency Criteria for Evaluation of Permit Applications for Ocean Dumping" (40 CFR 227, 38 FR 28618). This criteria was to be used in evaluating the suitability of discharge of dredged or fill material in the ocean and, until guidelines were promulgated, in inland waters also. These guidelines developed the Standard Elutriate Test. Dredged or fill material was considered to be unacceptable if the ratio of the constituent concentration in the standard elutriate to the constituent concentration in the receiving water was greater than 1.5. The standard elutriate results from a mixture of 4 parts unfiltered receiving water to 1 part dredged material.

On 6 May 1975 the EPA in conjunction with the Corps of Engineers published the inland water criteria for dredged or fill material entitled: "Navigable Waters Procedure and Guidelines for Disposal of Dredged or Fill Material" (40 CFR 230, 40 FR 19794). As previously stated, the Ocean Dumping Criteria's elutriate test requires that after the material to be dredged has been vigorously mixed for 30 minutes with four parts of the water to which it is to be discharged and the supernatent from the mixture has been filtered through a 0.45 micron filter, the concentration of the constituents shall be equal to or less than 1.5 times the concentration of those same constituents in the water before mixing. The new proposed (6 May 1975) Navigable Water Criteria (for inland dredged material disposal) allows for application of a 10:1 dilution of the standard elutriate. Mathematical expression of the above relationships is as follows:

$$\frac{Ce}{Cw} \leq 1.5 \qquad (1)$$

$$\frac{(0.1\ Ce + 0.9\ Cw)}{Cw} \leq 1.5 \qquad (2)$$

where Ce = Concentration from the standard elutriate test (dissolved)

Cw = Concentration in the receiving water (dissolved)

The newer proposed guidelines (40 CFR 230, 6 May 1975) have been revised on 5 September 1975 (40 CFR 230, 40 FR 41292). These new interim final guidelines, entitled "Environmental Protection Agency - Navigable Waters - Discharge of Dredged or Fill Material," have eliminated both the 1.5 elutriate criteria as well as the 10:1 elutriate dilution of the May 6 guidelines. As a substitute, the new guidelines recommended (1) comparing the elutriate to applicable narrative and numerical guidance contained in such water quality standards as are applicable by law, and, (2) possibly performing a total sediment chemical analysis. In addition, the guidelines note that EPA and the Corps of Engineers in the coming months will prepare and publish a procedures manual that will cover summary and description of tests, definitions, sample collection and preservation, procedures, calculations, and references.

In view of the changing nature of the evaluation basis, all four methods will be applied for the purpose of assessing the impact of the dredging on this project:

1) EPA, Region VI, proposed bottom sediment criteria. This will also serve to satisfy sediment analysis of the 5 September 1975 guidelines.

2) "Criteria for Evaluation of Permit Applications for Ocean Dumping," 40 CFR 227, 15 October 1973 (1.5 elutriate criteria).

3) "Navigable Waters Procedures and Guidelines for Disposal of Dredged or Fill Materials," 40 CFR 230, 6 May 1975 (1.5 elutriate criteria with a 10:1 dilution).

4) "Environmental Protection Agency - Navigable Waters - Discharge of Dredged or Fill Material." 40 CFR 230, 5 September 1975 (no elutriate criteria).

The first two methods of comparison, bottom sediment criteria and ocean dumping elutriate criteria, have been discussed in the main text of this EIS.

The purpose of this appendix is to compare the elutriate data with applicable water quality criteria. Table 3, page II - 20 of the main text, shows the water uses of the particular streams of the project. As can be seen from Table 3, Bayou Teche from its headwaters to Wax Lake is classified as a multiuse stream: primary contact recreation, secondary contact recreation, propagation of fish and wildlife, and domestic rain water supply. As such, the more strict of any proposed water quality criteria, that for public water supply, should be used for comparison with elutriate data. Proposed EPA water quality criteria for public water supply intake is shown in table E - 1.

A comparison of the elutriate data of tables 10 through 17 of appendix D with the proposed criteria of table E-1 shows that all the elutriate heavy metal values were less than the proposed EPA criteria. A comparison of the elutriate pesticide data from tables 25 through 32 of appendix D with the proposed criteria of table E-1 shows that all the pesticide elutriates were below the proposed EPA criteria.

Table 3, page II-20 of the main text, shows that the Vermilion River is used for: primary contact recreation, secondary contact recreation, and propagation of fish and wildlife. As most of the Vermilion River and Freshwater Canal in this reach is subject to tidal influence the proposed EPA numerical criteria for marine water quality constituents should be applicable. These criteria are shown in table E-2. Tables 6 through 9 and 18 through 20 of appendix D shows that all metals tested had elutriates less than the proposed criteria of table E-2. A comparison of pesticide elutriate data from tables 21 through 24 and 33 through 35 with table E-2 shows no detectable pesticides in the elutriates.

From the foregoing discussion it can be seen that, where comparable, the elutriates from the dredging project for the various streams involved were well below applicable EPA proposed water quality criteria.

PROPOSED EPA NUMERICAL CRITERIA FOR WATER QUALITY
PUBLIC WATER SUPPLY INTAKE

TABLE E-1

Parameter	ug/1
Arsenic	50
Cadmium	10
Chromium	50
Copper	1,000
Lead	50
Mercury	2
Zinc	5,000
Phenols	1.0
Cyanides	200
Aldrin	1
Chlordane	3
DDT	50
Dieldrin	1
Endrin	0.2
Heptachlor Epoxide	0.1
Heptachlor	0.1
Lindane	4
Toxaphene	5

PROPOSED EPA NUMERICAL CRITERIA FOR WATER QUALITY
MARINE WATER CONSTITUENTS (AQUATIC LIFE)

TABLE E-2

Parameter	ug/1
Arsenic	50
Cadmium	10
Chromium	100
Copper	50
Lead	50
Mercury	1.0
Nickel	100
Zinc	100
Cyanides	10
Oil and Grease	a. not detectable as a visible film, sheen, discoloration of the surface, or by odor b. does not cause tainting of fish or invertebrates or damage to biota c. does not form an oil deposit on the shores or bottom of the receiving body of water
Aldrin	5.5
DDT	0.6
Dieldrin	5.5
Endrin	0.6
Heptachlor	8
Lindane	5
Toxaphene	0.010

PROPOSED EPA NUMERICAL CRITERIA FOR WATER QUALITY
MARINE WATER CONSTITUENTS (AQUATIC LIFE)

TABLE E-2 (cont'd)

Parameter	ug/l
pH	6.5 - 8.5
Ammonia	400
Hydrogen Sulfide	10
Dissolved Oxygen	6.0 mg/l
phosphorous	0.1

APPENDIX F

CULTURAL RESOURCES

The appendix gives the catalog numbers as assigned by the archeological research faculty of the University of Southwestern Louisiana; it provides site names, attributions by cultural period where possible, and general locations. The table is divided into sections by the separate project areas-- Vermilion-Teche-and Vermilion-- and by map reference. Sites in all cases are recorded from north to south along each of the survey routes. Note that the Freshwater Bayou project area was omitted from the table. No sites were found during an intensive in-field bankline search nor were any previously known. The omission of Freshwater Bayou is thus a consequence of the absence of archeological sites or of our failure to find them under the deposits of dredged material.

The appendix is divided by project area and by parish. Data include names, locations, dates, descriptions, and other facts. Places on the National Register are marked with an asterisk (*) and those included on the Louisiana State Plan are distinguished by a plus (+) sign. No places of historic significance have been found on Freshwater Bayou.

APPENDIX F

TABLE 1

ARCHEOLOGICAL SITES IN PROJECT AREA

Map	USL no.	Name	Culture period
		Bayou Teche	
St. Martinville	16SM18	Wiltz	undetermined
	16SM18	Duplantis	Coles Creek
Loreauville	16IB2	Berard Mounds	undetermined, possibly Marksville
		Bayou Teche-Vermilion River	
Arnaudville	16SL2	Olivier	probably Archaic, Poverty Point and later
	16SL31	Bayou Carencro Mouth	undetermined, possibly Coles Creek

TABLE 1 (Cont'd).

	16LY7	Pont Brule	undetermined, possibly Archaic and later
St. Martinville	16SM25	Chain Tree	possibly Tchefuncte
	16SM26	Metal Camp	possibly Tchefuncte
	16SM10	Lafayette Mounds	Tchefuncte and Plaquemine

TABLE 1 (Cont'd)

St. Martinville (cont'd)	16SM9	Ruth Canal	"Early" Tchefuncte
	16SM21	Fournet's Firing Range	undetermined
	16SM20	Jim Fournet	undetermined
	16SM24	Fournet Mound	possibly Tchefuncte
	16SM17	Coulee Crow Mounds	Tchefuncte
	16LY24	Section 95	possibly Tchefuncte or later

TABLE 1 (Cont'd)

St. Martinville (Cont'd)	16LY25	Opposite mouth of Bayou Tortue	undetermined
	16LY1	Bayou Tortue	Tchefuncte, Historic, Issaquena, Troyville, Marksville, Coles Creek, Plaquemine
	16LY2	Airport Runway	possibly Troyville or Coles Creek
	16LY13	Unnamed	undetermined
	16LY6	Tortue levee	probably Poverty Point and Tchefuncte

TABLE 1 (Cont'd)

St. Martinville (Cont'd)	16LY10	Runway Mound	possibly Poverty Point and/or Tchefuncte
	16LY12	Unnamed	undetermined
	16LY11	Airport Escarpment	Archaic or Poverty Point
	16LY5	Beau Rivage	Poverty Point
	Not catalogued	Indian Mound Road	undetermined, destroyed during subdivision construction

TABLE 1 (Cont'd)

St. Martinville (Cont'd)	16LY22	Paul Breaux High School	Archaic, Tchefuncte, Issaquena, Troyville, Coles Creek, Plaquemine
Lafayette	16LY3	Trappey Mastodon	Archaic
	16LY4	Teche Street	Troyville or Coles Creek
	16LY26	Cottonwood	possibly Troyville or Coles Creek
	16LY23	Lee Picard	"Late" Archaic, Historic

TABLE 1 (Cont'd)

Lafayette (Cont'd)	16VM11	Archie Picard	possibly Coles Creek
	16VM17	Beverly Picard	"Late" Paleo-Indian, Archaic, and later
	No USL no.	"Gallet Cemetery"	undetermined, site reported to have yielded projectile points, but no present indications
Abbeville	16VM16	Abbeville	undetermined
	16VM15	Big Oak	undetermined

APPENDIX F

TABLE 2

VERMILION-TECHE HISTORIC SITES

No.	Site	Location	Date	Builder	Description
		St. Martin Parish			
VT1	Thibodeaux Home	Poydras St., Breaux Bridge	1850-60		Cypress 11/2 story cottage-bousillage-good repair.
VT2	Du Bernard Co Store	Bridge and Poydras Rd., Breaux Bridge	1900		Small wooden structure-good repair.
VT3	Bergeron House	Hy 347, 2 miles from Breaux Bridge			Cajun cottage-bousillage-outside stair-bad repair.
VT4	Revior House	St. Phillip St. & Bayou Teche, Breaux Bridge	1809	Revior Family	Cajun cottage-bad repair.
VT5	Girard House	St. Phillip St., Breaux Bridge	1809	Girard Family	Cajun Cottage-added structures-good repair.
VT6	Thevenet House	St. Phillip St., Breaux Bridge	1809	Thevenet Family	Cajun cottage-bad repair.

TABLE 2 (Cont'd)

VT7	Champagne Bakery	Poydras St., Breaux Bridge			Wooden structure bricked over. Chimney visible. The baking oven made of brick. Good repair.
VT8	Old City Hotel "Bourdier's Hotel"	205 Washington St., Breaux Bridge			Large frame structure used for hotel. Three stories, 2 chimneys, a large side porch. Presently in bad repair.
VT9	Leonce Ronsonet Home	Bridge St. at the bridge, Breaux Bridge	1890	Resonet	Large frame turn of the century Victorian house. Store located next door. Good repair.
VT10	Begnauld House	Berard and Martin Sts., Breaux Bridge	1890	Begnauld	Large frame turn of the century Victorian style. Cistern in yard. 11/2 stories, added back structure. Excellent condition.
VT11	Gustin Patin House	Avon St., Breaux Bridge			Victorian, turn of the century style with gingerbread. In bad repair.

TABLE 2 (Cont'd)

VT12	Alfred Broussard Home	Bridge St. Breaux Bridge	1900	Shot gun house. Small store next door, good repair.
VT13	A.J.Potier	200 Bridge St., Breaux Bridge	1900	It is a two story structure with living quarters over the store. Two story double gallery.
VT14	Frank Pellrin	140 Bridge St., Breaux Bridge	1900	Two story frame structure, double galleries. Fair condition.
VT15	Begnauld's Hotel	Bridge St., Breaux Bridge	1900	Old brick structure built by same family who built Vistorian House on Berard St. Fair condition.
VT16	Melancon House	Bridge St., Breaux Bridge	1860	Cajun house-11/2 story, 2 chimneys, front gallery. Good condition.
VT17	Kadair Hotel	Bridge and Main, Breaux Bridge	1900	A two story double gallery frame structure.

TABLE 2 (Cont'd)

VT18	Demageou Hotel	Main and Van Burean, Breaux Bridge	1900		Large white frame hotel with 4 columns, and several chimneys. Good repair.
VT19	Broussard Hardware	Bridge St., Breaux Bridge	1918	Duprey	Two story frame, double gallery store front. Fair condition.
VT20	Corner Bar	Poydras St., Breaux Bridge	1900	Charles Rees	Old frame structure, builder's home once stood next door. It was "Corner Store". Good condition.
VT21	Paul Broussard House	Poydras St., Breaux Bridge			Victorian turn of the century. In bad repair.
VT22	Teche Liquor Store	Bridge St. at the bridge, Breaux Bridge	1880	Alcide Breaux	Alcide Breaux had a hat shop here. She lived next door in a Victorian trimmed cajun cottage. Good repair.
VT23	Breaux Bridge Railroad Depot	Southern Pacific tracks, Breaux Bridge	1895		Original structure. In good repair.

TABLE 2 (Cont'd)

VT24	+Ruth Plantation	4 mi. S. of Breaux Bridge on La. 31		Mill burned, house torn down.
VT25	Valery Martin	Hy 31 S. of Breaux Bridge	Valery Martin	Louisiana raised cottage, no longer standing. Large oaks remain.
VT26	+Gabriel Oak	St. Bernard's High School, Breaux Bridge		Registered Live Oak Society.
VT27	Ned Champagne	Bridge St., Breaux Bridge		Cajun house. Good condition.
VT28	"Quartier souf frant"	Between Grande Point Ave., Poydras St., and Grant Ave., Breaux Bridge		Called quarter of suffering because of three individuals who lived there: a blind man, a man with a broken back, and a crazy woman.
VT29	+Grande Pointe	Area along Hy 31 between Cecilia and Breaux Bridge		Site of moss-draped oaks and Cajun cottages.

TABLE 2 (Cont'd)

VT30	+Paradise Woods	On La. 94, 1 mi. from Breaux Bridge Between Berard St. and Teche Bayou			Groove of live oaks.
VT31	+Archangle Live Oak	In Paradise Woods off Hy 94, Breaux Bridge			
VT32	+Le Vert St. John Plantation House and Sugar Refinery	Hy 31, 11/2 mi. N. of St. Martinville	1828	Alexander Etienne de Clouet	House is Greek revived style. The mill and store are still in operation.
VT33	"Les Memories"	Hy 96, 4 mi. from St. Martinville	1836	Aldelard de Rousselle	Louisiana raised cottage of bousillage brick, cypress. Modernized, restored.
VT34	+Louis Arceneaux House or Acadian House Museum	In Longfellow-Evangeline Park, Hy 31, 1 mi. from St. Martinville	1765	Chevalier de la Houssage	Louisiana raised cottage of cypress and bousillage.

TABLE 2 (Cont'd)

VT35	+Longfellow Evangeline State Park	Hy 31, 1 mi N. of St. Martinville			
VT36	+The Gabriel Oak	In front of the Acadian House Museum in Longfellow Evangeline State Park			
VT37	Stations of the Cross	Hy 96 from St. Martinville to Catahoula			Wooden painted boxes attached to live oak trees. Bad condition.
VT38	+Pine and Oak Allee	Hy 96 E. of St. Martinville	1800	Jacques Fontenette	No house. Spanish Land Grant. Charles Durand later sprinkled spider webs with gold and silver for daughter's wedding.

VT39	Eugene Duchamp de Chastaigiers Plantation House	Hy 96 W. of St. Martinville	1778	Eugene Duchamp	A 3 story raised cottage with 3rd floor dormer windows. Three inside chimneys. Fair condition.
VT40	+Poste de Attakapas Cemetery Remnent	Near St. Martin du Tours Catholic Church, St. Martinville			
VT41	*+US Post Office	Main and Port St., St. Martinville	1876	Eugene Duchamp	Designed after a home in Martinique. There are round 2 story columns. It is of cypress and native brick.
VT42	*+St. Martin du Tours Catholic Church	133 Main St., St. Martinville	1832		Greek revival, massive doors.
VT43	+St. Martin Parish Courthouse	400 S. Main St, St. Martinville	1760		Classic Greek revival architecture.

TABLE 2 (Cont'd)

VT44	+Mercy Convent	St. Martin St., St. Martinville	1890	Grey steamboat gothic structure.
VT45	+Old Castile Hotel "Convent of Mercy"	214 Port St., St. Martinville	1790	Oldest building in St. Martinville, it served as the trading post, an inn, a hotel. Became Sisters of Mercy in 1896
VT46	+Tomby of Emmeline Labiche	Behind St. Martin du Tours Church, St. Martinville		Monument and burial in oldest part of the cemetery.
VT47	The Presbytere	Beside St. Martin du Tours Church, St. Martinville		Greek revival architecture.
VT48	Monuments and Statues at St. du Tours	In front of St. Martin du Tours Church, St. Martinville		1. Attakapas Indians. 2. Pere Jan. 3. St. Martin du Tours. 4. Revolutionary Patriots Marker.

VT49	Musee de Petit Paris L' Amerique "Little Paris Museum"	Beside St. Martin du Tours, St. Martinville			
VT50	+Evangeline Oak	Port St. and Bayou Teche, St. Martinville	200 yrs. old		Registered Hall of Famous Trees.
VT51	The Fournet House	Berard St., St. Martinville	1849	William Eastin	Greek revival style.
VT52	The Martin House	Gary St. near Bayou Teche	1821	Robert Martin	Early raised cottage-bousillage and brique-entre pateau.
VT53	+Old Catholic Cemetery St. Michaels	Bridge and Cemetery Sts., St. Martinville	1840		
VT54	The Andre-Olivier Store & Museum	Bridge St., St. Martinville			Historical documents and artifacts. Structure, a wooden one room store front.

TABLE 2 (Cont'd)

VT55	La Maison du Dimanche The Sunday House	Bridge St., across from St. Martin du Tours Church	1815	Gabriel Bouillet	Construction is cypress covered with bousillage and white washed. It is an oblong structure with pitched roof restored.
VT56	+Keystone Lock and Dam	On Bayou Teche near the St. Martin-Iberia Parish Line			
VT57	+La Maur	Near La 345 out of Loreauville			No new information.
VT58	Loreauville Heritage Village	401 Main St., Loreauville			Good collection of daily life tools and household items.
			Iberia Parish		
VT59	+Belmont Plantation	Hy 345 out of Loreauville		Wysche	House, burned in 1947 is now a camper-park open to the public.

VT60 +Justine	Hy 86, 2 mi E. of New Iberia	1822		Moved to present site down Teche from Centerville. La cypress frame house. Open to the public.
VT61 Camp Pratt	Between Hy 182 and Spanish Lake	1863		It was the training camp for recruits for the Confederacy in South La.
VT62 +Dulcito	La 182 6-7 mi W. of New Iberia just inside Iberia Parish	1788	Dauterive Dubucet	It is a 11/2 story Cajun cottage, front and side galleries. Large oaks, pecans, magnolias.
VT63 +Lady of the Lake Plantation Home "Le Coteau"	Hys 31-182 about 21/2 mi. S. of St. Martinville	1797	Jean Batiste de Blanc	Built on a Spanish Land Grant, it is a two story house with side and front galleries. It has a hipped roof, constructed of brick, bousillage. Poor condition.

TABLE 2 (Cont'd)

VT64	*+Darby Plantation	Darby Lane, New Iberia off Hy 31, 1 mi W. of New Iberia	1820	Francois St. Mar Darby	Spanish Land Grant. A two story raised cottage. Brick, cypress. bricks pie shaped for round columns. Historical Attakapas Society now owns, in poor condition.
VT65	+Segura	Hy 90, 2 mi W. of New Iberia	1790	Francisco Segura	Spanish Land Grant. Raised cottage. Has been restored.
VT66	Spanish Lake "Lake Flamand" Lake Tasse	Between St. Martin and Iberia Parishes			Four Spanish Land Grant Plantations framed the lake. It was the site of a Civil War Camp and nearby hospital at Dulcito.
VT67	Statue of Hadrian	Weeks and St. Peter, New Iberia	130 A.D.		A Roman work it is of the Emperor Hadrian (ruled 117-138 A.D.). It is 7 ft. high.

TABLE 2 (Cont'd)

VT68	*+Shadows on the Teche	117 E. Main St., New Iberia	1835	David Weeks	Raised cottage, original furnishings. May 17, 1975 made a National Historic Landmark.
VT69	The Erath Building	333 W. St. Peter	1876	Auguste Erath	Several gables, three stories, and six chimneys.
VT70	+Mount Carmel Convent	109 Bridge St. New Iberia	1830		Large house with galleries. Now used as girls' school.
VT71	+Church of the Epipheny	303 W. Main St., New Iberia	1858	Episcopal Bishop Polk	Brick structure and chapel. A bell tower in front. Used as a hospital during the Civil War. Episcopal Church today.
VT72	Fredrick Leonard Gates House	541 Main St., New Iberia	1870	Fredrick Gates	Large cottage style structure, interior double chimney. Addition to the side.

TABLE 2 (Cont'd)

VT73	Gabert Live Oak	541 E. Main	1931		400 yr. old oak. Registered Live Oak Society at Gates House also.
VT74	Bernard Wagon Works	Main St., New Iberia	1870	Bernard	Served as blacksmith shop, wheel-right shop. Closed after World War I.
VT75	J. Gall Plantation and mill	4 mi. from New Iberia	1880	J. Gall	Floated syrup to Jeanerette on barges, then piped it for refining in Jeanerette.
VT76	Nelson's Canal Skirmish	S. of New Iberia on Bayou Teche	1863		Gunboat "Hart" scuttled. Many killed.
VT77	Coffin-in-the-tree	Hy 90 E. of New Iberia on federal government agricultural property.			A tin box used to keep water high for use in case of flooding. "voo doo" tales about it.

TABLE 2 (Cont'd)

VT78 +Jungle Gardens	Mayward Hill Avery Island on La 329 S. of New Iberia			
VT79 +Jefferson Island	Located 7 mi W. of New Iberia on La 675			Also called Orange Island, Miller's Island, Cote Corler
VT80 +Weeks Island Grande Cote	Near La Hy 83			
VT81 +Avery Island Petite Anse Thomas Island Salt Island	La Hy 329 S. of New Iberia			Blue pond, Bird City, Avery Island Salt Mines. Prehistory and Civil War activity.
VT82 +Enterprise Patout Home	Patoutville, W. of Jeanerette Hy 85	1825	Patout family	Royal French Grant. House is a large two story colonial style with six round columns. Still in operation.

TABLE 2 (Cont'd)

VT83 +Beau Pre or Beau Tre	U.S. 90, 4 mi N.W. of Jeanerette	1829	Thomas H. Thompson	John W. Jeanerette, for whom the city was named was once owner. Longfellow was guest here.
VT84 +Alice or Roane House	Jeanerette on on the Teche	1800		Louisiana Colonial architecture. Moved to present site from Baldwin in 1960.
VT85 +Bayside	Hy 90, 1 mi W. of Jeanerette	1850	F. D. Richardson	Two story whitewashed Greek revival. Brick with brick dorneic columns. Richardson was a Louisiana Legislator. Edgar Alan Poe visited here.
VT86 +Moresi House	608 Main St., Jeanerette	1852	Antonione Moresi	Large white frame house, four round wooden columns. Shutters, French doors and windows.
VT87 +Moresi foundry	Main St., Jeanerette	1852	Antonione Moresi	Large brick structure. Main part today dates from 1898. Blacksmith, wheelright, and parts for sugar mills.

TABLE 2 (Cont'd)

VT88	De Graville House	Main St., Jeanerette			Oldest structure in Jeanerette. Due to be demolished this year.
			St. Mary Parish		
VT89	+Albania Plantation and mill	U.S. 90 1/4 mi E. of Jeanerette	1842	Fr. Land Grant by Royalist refugee	Large cypress frame house. Six columns and double gallery. Third floor dormer windows. Mill was shipped to Cuba.
VT90	Sorrel	Hy 90-between Jeanerette and Baldwin	1750	Joseph Sorrel	Three thousand acre ranch and cattle route from Mexico to Vacherie on Miss. River.
VT91	+Church of the Immaculate Conception	Hy 87, Charenton			Frame structure
VT92	Walker Home	Charenton			

TABLE 2 (Cont'd)

VT93	+Chitimacha Indian Reservation	Charenton		Spanish Land Grant	Only Federal Indian Reservation in Louisiana. About 160 acres, 180 people.
VT94	+Heaton Villa	Hy 326, Charenton Rd. 3 mi N of Baldwin	1853	Albert Heaton	Station style "Dakis design". It is of symetrical design with first floor gallery, second floor dormer windows.
VT95	Camp Hunter	Near Baldwin on Bayou Teche			A Confederate encampment site.
VT96	Sager Brown Home or Byrne Place	Baldwin	1867		Home for Negro orphans, Gilbert Academy, now the Methodist Church.

TABLE 2 (Cont'd)

VT97 +Darby-Rosebud Plantation & Sugar Mill	Rosebud St. Baldwin	1806	Darby	On a Spanish Land Grant the house is a raised cottage of brick and wood. Incorporated with Fusilier Mill and is now Baldwin Mill.
VT98 +Vacherie	4 mi S. of Baldwin			No further information.
VT99 +Fuselier House	1/2 mi E. of Baldwin on La 326	1803	Agricole Fuselier II	Modeled after nearby Darby. Now the Walker Development Co.
VT100 Cottage-on the Teche	Hys 324-326 Baldwin			11/2 story white frame with front gallery. Old store with double galleries. Store and house across Hy 326 of same vintage.
VT101 +Oaklawn Manor	Hy 90 and Irish Bend Rd., Franklin	1827	Alexander Porter	Greek revival with six doric columns. Cemetery, old oaks. House completely rebuilt and restored.

TABLE 2 (Cont'd)

VT102	Irish Bend Rd.	La Hy 87 along Teche Bayou E. of Franklin			Historic homes and major battle site of Civil War.
VT103	+"Battle of Irish Bend" "Nelson's Woods"	N. of Franklin below Baldwin	1863		Federal troops followed Confederates from Bisland. Weigel of the Federal Army, entered Franklin from the east. He met Mouton which enabled General Taylor of the Confederacy to escape to Jeanerette.
VT104	+Halfleigh Sterling Plantation	La 87 off Irish Bend Rd., Franklin			
VT105	+Grevemberg House, Don Caffery House	Sterling Rd near Irish Bend Rd., Franklin	1853	Wilson	Two story white frame structure, with 4 corinthian columns, wooden spindles and rails. Now a museum.

TABLE 2 (Cont'd)

VT106	"Diana"	Sank near Sterling Sugar in Franklin	1858		It was 239 tons. Sank after being purposely burned and scuttled to keep Federal gunboats from navigating the Teche.
VT107	Cemetery	Main St. and Bayou Teche			
VT108	Rugby	606 Adams St., Franklin	1859	Joseph Wood	Built as a boarding school by an Episcopal minister. Cypress construction with neoclassic design. There are 4 simple square columns, double galleries, shutters. Good condition.
VT109	Shadowdown Shadowlawn	906 Main St., Franklin	1830	Simon Smith	Greek revival style with classic columns of hand turned wood. Slave quarters connected by double gallery in rear date to 1852. Original furnishings. Good condition.

TABLE 2 (Cont'd)

VT110	Asbury Methodist Church	907 Main St., Franklin	1838	Baptist Congre- gation	Oldest church structure in Franklin.
VT111	St. Mary Episcopal Church	805 First St., Franklin	1871		Present building replaced structure that dated to 1849. It is the 4th oldest Episcopal congregation in La.
VT112	Smith House	909 Second St., Franklin	1832	John Hartman	It has three stories, six columns and is made of brick and cypress. It has a gabled roof, dormer windows, French windows on a double gallery.
VT113	Allain House	909 Second Ave., Franklin	1823	James South	Used as a bank before and after the Civil War. It was a branch of the Bank of New Orleans and operated by Judge William Taylor Palfred.

TABLE 2 (Cont'd)

VT114	Chadwick Cottage	615 Third St., Franklin	1850		A well proportioned Louisiana cottage.
VT115	Postoffice	Willow St., Franklin	1800's		
VT116	+Courthouse	Willow and Main St., Franklin			
VT117	The Columns A.H.Blevins	305 Main St., Franklin			It is Greek revival style. Moved from the site of the postoffice and rebuilt. The columns were moved intact.
VT118	"Bittersweet" Porter Allen House	301 Main St., Franklin	1851	William Porter Allen	Greek revival house with four columns. Allen was the first mayor of Franklin.

TABLE 2 (Cont'd)

VT119	Cypress House	300 Main St., Franklin	1890		Large cypress turn of the century Victorian style house. Furnished with Victorian antiques. Open by appointment.
VT120	+Gates House	205 Main St., Franklin	1851		Greek revival facade with raised cottage style. It has slender corinthian columns across the front.
VT121	Fleming House	203 Main St., Franklin	1889	Phillip H. Mentz	The site is on 2 Spanish Land Grants. The house is Victorian style, with 2 stories, double front and back galleries.
VT122	John O'Neill House	201 Main St., Franklin	early 1800	John O'Neill	On a Spanish Land Grant. A raised cottage supported by square columns across the front. Foster family from 1851. Good condition.

TABLE 2 (Cont'd)

VT123	+Palfrey Home & Plantation	200 Main St., Franklin	1842	Mathieson	A two story structure with 4 round columns, gallery in the rear. Slave cabin at rear that faces the Teche. A 400 yr old Live Oak.
VT124	Hanson House J.C.Blevins	114 Main St., Franklin	1850		Greek revival. It has pedimented porticos with square columns.
VT125	Shady Retreat	Hy 90 E. of Franklin	1852		It is a raised cottage. Columns were added in 1930. Good condition.
VT126	Arlington "Old Baker Place"	Hy 90 E. of Franklin	1834	Euphrasy Carlin	House is white Greek revival, with 4 flutted columns. It has iron balustrads and a double gallery. Carlin was ostracized by other plantation owners because he was part Negro. Good condition.

TABLE 2 (Cont'd)

VT127 +Dixie, Murphy J. Foster	On Hy 90 11/2 mi E. of Franklin	1850	Wilkes Family	The house is two story with a hipped roof. It is of cypress construction and has 4 square columns. Owned in 1886 by Governor Murphy J. Foster. Good condition.
VT128 +Alice C.	Hy 90 E. of Franklin	1846		It is a two story raised cottage.
VT129 +Frances Plantation	Hy 90, 2 mi E. Franklin near Garden City	1810	Louis George de Maret	The house is two storied, gabled roof, 4 columns, a chimney on each end. A short oak alley. Builder married daughter of Don Martin Navarro who had the Spanish Land Grant to the property. Restored, used as gift shop.

VT130	Post Office Garden City	Hy 90, Garden City			A two story frame structure with shutters and front gallery.
VT131	+Shakespere Allen House	Hy 90 E. of Centerville	1850		Two story house with 4 fluted Corinthian columns.
VT132	+Susie	Hy 90 and Bayou Sale, Centerville	1852		A hipped roof frame house.
VT133	+Bocage on the Bayou, Oak-bluff	Hy 90 E. of Franklin, W. of Centerville	1846	David Bell	Greek revival style of cypress construction. Moved to "Old Haley Place" in 1968. Good condition.
VT134	+Vitter House	Centerville at Bayou Sale			Greek revival portico supported by square columns.
VT135	+Lewis Kennedy Hotel, "Hotel House"	Hy 90 on Bayou Teche, Centerville	1855		Simple construction of cypress with double gallery and square columns.

TABLE 2 (Cont'd)

VT136	Presbyterian Church	Hy 90, Centerville		White frame New England style front front steeple. Large oaks and cemetery.
VT137	North Bend Plantation and Sugar House	Centerville		No house, mill in ruins. Smoke stack looks like large ivy planter.
VT138	Bayou Sale Rd.	Near Centerville along Bayou Sale		Old structures and cemeteries.
VT139	Camp Bisland "Bethel Place"	Near Calumet N. of Patterson		Cornay's Bridge burned on Teche. Wax Lake Outlet cuts between camp and Cornay's Bridge.
VT140	+Fairfax	10 mi N. of Patterson near Wendell Williams Airport	Dr. Thomas Bisland	House is in ruins. It was used as both Confederate and Federal camp site during the Civil War.

TABLE 2 (Cont'd)

VT141	+"Battle of Bisland"	Grand Lake about 13 mi E. of Franklin		Cornay's Bridge burned. Cotton sank.
VT142	Calumet	U.S. 90, 5 mi W. of Patterson	early 1800's	Cottage type construction. It was altered and enlarged in 1870.
VT143	J.A.Cotton	Sank south of Wax Lake	1861	A 549 ton gunboat. It burned & sank in a battle with four Federal gunboats during the Civil War.
VT144	Warren Bell	Sank in Bayou Teche	1865	A 242 ton ship sank on 2-6-1870 after it snagged. There were no casualties.
VT145	Effort	Sank near Franklin in Bayou Teche	1836	It sank on 9-3-1838 after snagging. It was an 80 ton ship. There were no casualties.
VT146	Anna E.	Sank in Bayou Teche	1864	Sank on 11-15-1871 after snagging. It was an 86 ton ship. There were no casualties.

VT147	Ajax	Sank near Jeanerette	1836		Sank 3-3-1841 after snagging. It was a 120 ton ship. There were no casualties.
			St. Landry Parish		
VT148	Devilliers House	Bayou Rd. between Port Barre and Leonville		Nottey de Villiers	One story frame structure with front gallery. Builder is grandson of an early French official.
VT149	Robin House	La 31 S. of Leonville		Joseph N. Robin	11/2 story cottage. He was the son of Francis Robin an early planter and business man in Leonville.
VT150	+Lemelle House	Hy 31 between Port Barre	early 1700's	Alexandre Lemelle	Cottage of poste adobe construction. It has hand sawn cypress posts filled with bousillage. Walls are plastered and exterior weather boarded. Shingle roof covered with tin. Builder was son of a Frenchman.

TABLE 2 (Cont'd)

VT151	Trilot House	Hy 31 from Leonville to Arnaudville			Small Cajun cottage. A large oak tree beside it.
VT152	+Huron	Hy 341 between Arnaudville and Cecilia, 4 mi S. of Arnaudville	1850	Charles Lastrapes	A raised cottage of brick and cypress. In ruins.
			Lafayette Parish		
VT153	Beau Bassin	Carencro Bayou	1832		
VT154	Parish Library	End of Church St. Carencro			Large frame house with large one story front gallery. Grounds and house in excellent condition.
VT155	Dr. Alexis Guidry House	Bayou Carencro, Carencro		Alexis Guidry	Alexis Guidry son of Onejime Guidry, an early settler.
VT156	Onejime Guidry House	Bayou Carencro, Carencro		Onejime Guidry	Plantation house now abandoned.

VT157	"Battle of Bourbeux" or Grand Coteau	Camps and Skirmishes on Bourbeau	Oct-Nov 1863	Area from Chretien Plantation House N. to point on the Bourbeau due E. of Bellevue Ned Church.
VT158	Chretien Point	Hy 93 near Sunset Southern end of Carencro Bayou		Architecture between La. Plantation and Classic Greek revival. Two stories with six round columns, hipped roof and 2 chimneys. Used as "Tara" in film "Gone with the wind" Open to the public.
VT159	Camp "Carron Crow"	From lounge on Hy 167 to present bridge on Hy 182, Carencro	1863	Used as Union forces camp in April and Oct-Nov of 1863. Numerous skirmishes occurred. Confederates also used the site for camp.

TABLE 2 (Cont'd)

VT160	Lile Carencro House	On Carencro Bayou, Carencro	1820	David & Modest Guidry	Frame structure with front gallery. It has additions on each side. Used as a stagecoach stop, Union Head-quarters by General Washburn, also a hospital following the Battle of Bourbeaux.
VT161	St. Peter's Catholic Church "St. Pierre"	Carencro	1874		Names of old French families carved in wooden pews.
VT162	+Pin Hook Bridge Pin Hook Petit Manchac	Pinhook Rd. and Vermilion River, Lafayette on U.S.90			Site of first fort, and settlement. Also a Civil War skirmish, the bridge was burned.
VT163	+Civil War Skirmish Site	400 Girard Park Dr. Girard Park, Lafayette			

TABLE 2 (Cont'd)

VT164	Cypress Lake	USL Campus, Lafayette		Natural Louisiana swamp, many varieties of iris.
VT165	+St. John's Roman Catholic Cathedral	914 St. John St., Lafayette	1822-land 1914-structure	Land donated by Jean Mouton in 1822. There were 5 acres for the church and cemetery. Byzantine architecture
VT166	+St. John's Cemetery	Behind the Cathedral	1822	
VT167	+The Cathedral Oak	St. John St., Lafayette	300 yr. old	Civil War troops of General Weizel camped around it, were pictured by it
VT168	Gladu House	Off St. John St. Lafayette		Moved from down the street. A 1 1/2 story frame cottage
VT169	+Old City Hall	Across from court-house, Lafayette	1898	A small two story brick building, a small circular balcony. Built originally for use as a bank.

TABLE 2 (Cont'd)

VT170	+The First Presbyterian Church	323 Buchanan, Lafayette	1878	No longer standing. No information.
VT171	Jewish Cemetery	University and Lee Sts., Lafayette		One city block, fenced with iron fence, large oaks
VT172	The Ricard Home	614 Madison, Lafayette	1910	Also called Ducote home. No other information
VT173	The Charles Caffery Home	223 Garfield, Lafayette	1910	
VT174	The Jules Revillion Home	1022 S. Washington St., Lafayette	1880	
VT175	The Gordon Hotel	E. Vermilion, Lafayette	1904	Large white frame building. Victorian gingerbread.
VT176	Mary Montalbano Home	214 W. Vermilion, Lafayette	early 1900's	

TABLE 2 (Cont'd)

VT177	Sans Souci Bookstore	219 E. Vermilion St., Lafayette	1866		Served as first post office in Lafayette. It is a one room frame structure.
VT178	Lafayette Hardware Store	101 W. Vermilion Lafayette	early 1900's	Gus Lacoste	Large two story building, store front on first floor, warehouse above.
VT179	Griffin Cotton Gin	Six Corners, Lafayette			Brick warehouse.
VT180	Dr. J.D. Trahan House	814 Washington St., Lafayette		Eastin Family	Lumber from St. Martinville, builder and architect, Rayin Wallis.
VT181	Acadian House	702 W. University Ave, Lafayette			Cottage, outside stair. Moved to present site from Carencro.
VT182	+Charles Mouton House, "Shady Oaks"	338 Sterling Ave, Lafayette	1848	Charles & Homer Mouton	A three story raised cottage. Served as Union Headquarters for General Banks. Once owned by Dr. Mudd. Excellent condition.

TABLE 2 (Cont'd)

VT183 +Lafayette Museum	1122 Lafayette St., Lafayette	1836		Frame structure. Second floor and capola added by Dr. William Mills in 1849. Also former home of Governor Alexander Mouton. Open as a museum. Excellent condition.
VT184 +Mouton Statue	Lee and Jefferson Sts., Lafayette			Depicts General Mouton of Civil War fame.
VT185 +Henri Bendel Estate, "French House"	St. Mary and Johnston Sts. Lafayette	early 1900's	Henri Bendel	Two story brick structure. USL meeting house.
VT186 Whitfield House	Moss St. Ext., Lafayette	1911		A large frame house. Dormer windows on second floor. Bought by Whitfield family the year after it was built.

TABLE 2 (Cont'd)

VT187	Raoul Jeanmard House	406 Sterling Ave, Lafayette	before 1880	Meri-weather	Bought by Jeanmard family in 1880. Bishop Jeanmard, first Bishop of Lafayette lived here in 1890. Three story frame structure, oak and cypress. Excellent condition.
VT188	J.C.Nickerson Home, "Sterling Groove"	310 Sterling Ave, Lafayette	1896	Snodgrass	Frame cypress structure with oak floors, a wrap around bottom floor gallery. Restored.
VT189	The Latiolais House "Coqullin"	319 Sterling, Lafayette	1820	Alexander Latiolais	Large white frame structure.
VT190	Dr. Thomas Hopkins Home	317 Pierce St., Lafayette	1815	Kennedy family	Moved from Bosco to present location. Two story brick and cypress. Interior double fireplace, dormer windows. Used as a commissary during the Civil War. Good condition.

TABLE 2 (Cont'd)

VT191	Dr. Salles Dental Office	300 Buchanan St., Lafayette		Cajun cottage, good repair. Now an insurance office.
VT192	Mouton Plantation House, "Isle Capol"	Hy 90 and Vermilion River, Lafayette		No remains of house. Site of Civil War skirmish. Prehistoric mastodon has been unearthed. Trappey Co. presently.
VT193	+Early Acadian House and Garconeire "Rickwood"	1300 Pinhook, Lafayette		Two story white frame structure, moved to present site from near Pinhook Bridge. Used as a hotel, inn, restaurant.
VT194	Protestant Cemetery Masonic Cemetery	400 Pinhook Rd., Lafayette		Above ground structure, wrought iron fence.
VT195	"Around the World Tropical Gardens" or New Hope Center	Ridge Rd., Lafayette	1976	Three Cajun cottages to be moved here and restored.

TABLE 2 (Cont'd)

VT196 +Myrtle Plantation House, "Hugh Wallis Home"	Off U.S.90, S. of Lafayette	1811	Dr. Mathew Creighton	House has a mural on a canvas wall by French artist Charles de Bubuire completed after the Civil War.
VT197 <u>Georgia</u>	Sunk near Lafayette	1837		Sunk on 5-29-1842. It has 135 tons. It burned, There were no casualties.
VT198 <u>Gretna</u>	Sunk near Lafayette	1847		Sunk either in June or September of 1851, it carried 22 tons and exploded. There were no casualties.
VT199 +Billeaud Sugar House	U.S. 90, 11/2 mi S. of Broussard			Mill, old frame office and store. Still in operation.
VT200 Sidney Martin House	N. Moss St. Ext. Lafayette	1820		
VT201 +Little Acadian House, "Josette Salles Home"	End of Kaliste Saloom Rd., Lafayette	1851	Richard Chagois	Moved from 504 Buchanan and restored. Brick added.

VT202	Broussard Store	L.T. Broussard Bridge at end of Kaliste Saloom Rd., Lafayette	1820-30	Darmos Broussard	Run by Darmos Broussard then Eloi D. Broussard. Broussard home dating to turn of century. (at bridge)
VT203	"Oakborne"-Long	E. bank of Vermilion across from Bayou Shores Subdivision	1840	Honore Beraud	Two story frame structure. Restored in 1960. Beraud was the son of Thomas Beraud from France. It belonged to Billeaud Sugar family, then Long in 1868.
VT204	Breaux House	On Oakborne Plantation on Breaux Bridge Hy.		Gustave A. Breaux	Frame structure.
VT205	Magnolia Plantation	Breaux Bridge Hy. at De La Salle Seminary			House burned in 1900.

TABLE 2 (Cont'd)

VT206	R.P. Phillips House	Hy 90 between Lafayette and Broussard			Cajun cottage 11/2 story, frame structure
			Vermilion Parish		
VT207	Odilon Broussard Store	By bridge in Milton	1830		Frame structure moved 30 years ago. Now part brick. Served as store and saloon.
VT208	Marice Picard House	S. of Milton, W. bank of Vermilion River	1830	Augustin Picard	Augustin Picard was from France. Mrs. Forest Picard presently owns it.
VT209	Gullism Mortel House	1/4 mi S. of Hunter Conrad Pumping Station Milton	1840-50		Built at site of 1st ferry crossing. The first ferry dates to 1785.
VT210	Alexander Dennis Home	At 2nd ferry crossing, Milton	1830		

TABLE 2 (Cont'd)

VT211	Buelah's Store	Hys 734 and339 near Milton and Erath			A wooden one room country store. Moved to this corner 50 years ago to be used as a store.
VT212	Oaklawn Bridge and Cemetery	W. bank of the Vermilion River S. of Milton			
VT213	LeBlanc House	Hy 339, LeBlanc community near Erath	1830	Jean Baptiste LeBlanc	1 1/2 story frame cottage with front gallery. Structures to side and back. Groove of large live oaks.
VT214	+Victor Shriver House	Hy 82	1830		Built of clay bricks and cypress. Antique farm implements collection. By appointment.
VT215	+Mt. Carmel Academy	Abbeville			First school building behind church. No longer in existence.

TABLE 2 (Cont'd)

VT216	Fairview St.	Abbeville	1890	Many Victorian turn of the century houses in good repair. Matt Gordey, a builder responsible for many structures in Abbeville.
VT217	Miller-Carter Homestead	Abbeville	1850	Cottage in fair condition.
VT218	+St. Mary Madeleine's Roman Catholic Church	Abbeville	1906-1912	Original church burned. This structure faces the church square.
VT219	+St. Mary Madeleine Square	Abbeville		Original church property. Created by desire of the Priest, Pere Megret, to make this town like his native Abbeville, France.

TABLE 2 (Cont'd)

VT220	Godcheau Cemetery	S. Main St., Abbeville			Jewish, Episcopalian--everyone not Catholic.
VT221	Albert Boudreaux House	123 S. Main Abbeville		Dr. Marion Young	A three story frame structure, built as a hospital. Used as office and home.
VT222	Steen's Syrup Mill	121 N. Main Abbeville			Original sugar mill in the Abbeville area. In operation.
VT223	Edna B. Evans	307 Main Abbeville			
VT224	Riviana Rice Mills, " "Planter's Mill"	Washington St., Abbeville			Founded by farmers one of largest rice milling complexes in the U.S. Marret Putman owned it at one time, then the Godcheau's.
VT225	+Edwards House	337 N. State St., Abbeville	1880	Judge E. E. Edwards	He was the grandson of Judge Wakeman Edwards, a district judge before the Parish was in existence.

TABLE 2 (Cont'd)

VT226	St. Paul's Mission, Episcopalian	101 E. Vermilion Abbeville			Small frame structure.
VT227	Putnam	104 N. E. St., Abbeville	1830-40	Judge Guegnon	House built around a long cabin. Porches added by Dr. Marion Young who built the hospital at the turn of the century. Modeled after an older style house.
VT228	Alcide LeBlanc House	N. side of Vermilion River E. of Perry's Bridge		Captain Perry	Oldest home in the district. Descendant of Joseph LeBlanc who sold land Abbeville was built on. A two story Acadian style in good condition
VT229	Perry O'Bryan Cemetery	Perry	1853		One burial of a Revolutionary War veteran.

F-55

TABLE 2 (Cont'd)

VT230	Cemeteries				
	Gooch	S. of Perry	1890		1 mi below Perry's Bridge.
	Coulee Kinney				
	Prairie Gregg				On a bayou above the ferry.
	Badin (Mouton) Cemetery				Brother of Jean Mouton, Marion Mouton buried here.
VT231	Marion Mouton	Bancker Canal	1840-48		No further information.
VT232	Grotto	Near ferry at Bancker			
VT233	Rose Hill Plantation	Rose Hill Settlement S. of Perry	1833	Thomas Fletcher & B rnard McDermoth	Veterans of the Revolutionary War. Named for flower that grows wild. No house left. Cotton, then sugar cane grown.
VT234	Bowie's Island	S. of Perry	1815	Rezin Bowie	Later became Live Oak Is. after a cut through to straighten the bayou.